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DEVOTED TO

Agriculture, Horticulture, and Rural Economy.

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"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

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JUNE.

"Leaf, blossom, blade, hill, valley, stream,
The calm, unclouded sky,
Still mingle music with my dream,
As in the days gone by.
When summer's loveliness and light,
Fall round me dark and cold,
I'll bear indeed life's heaviest curse—
A heart that hath waxed old."

Work for the Month.

This is the month of increase, and as it is the farmer's especial care to make such things grow as ought to grow, so he must be sure to keep down such as ought not to grow. If he allow the grass to get possession of grounds devoted to corn or tobacco, or any other crop, his season's operations may be a failure. And this may very readily happen, if a long spell of rain comes in June, unless he take care to check the first movements of the enemy. Let the ground be kept thoroughly worked from the beginning.

CORN CROP.

This remark is particularly applicable to the corn crop, for more than the reason given. Should the field get grassy, extra work with the plough will be required to get it again in order, and by considerable increase in the cost of cultivation, a reduced crop may be made; but besides this, there is the further reason—the necessity, in order to insure a full crop, of working thoroughly in the early stage of growth, and so to avoid cutting, and tearing up the roots after harvest, when the crop has the utmost need of every source of supply. For the ordinary purposes of corn cultivation, destroying very young grass, and keeping the surface loose, shallow cultivation only is needed, and the work is most expeditiously done by a cultivator which does not run deeply. Let the crop be thinned as soon as it is safe from worms and birds.

TOBACCO CROP.

It is very desirable to have this crop planted before the middle of the month. Planting seasons become then very precarious, and the ground has become so hot that they are of very short duration. Let the utmost energy be used therefore in getting ground in readiness, and if there is any doubt of the sufficiency of your own force, engage assistance in advance, that the crop may be set at the earliest planting season.

Of course the ground must be put into the finest possible tilth to make sure of the plants taking regularly. Careful hands only must be entrusted with the work of planting; it is necessarily done in haste, and only experienced and careful hands will plant well. They should be required to open the earth with two or more fingers, that the root may be inserted without doubling, and the loose soil should then be pressed closely back to the full depth of the hole made.

It is advisable to give the first working with the hoe very soon after planting, scraping carefully the whole surface crust from around the plant, and picking away with the fingers the smallest sprig of crab-grass or purslane. One of these left behind will soon throttle the young plant. The work of hoeing must be

done with great care, especially if the ground be quite dry, as a touch of the hoe may loosen the plant from its hold, and destroy it. With the greatest precaution many plants die out in weeding. If the weather become very hot and dry, it may become necessary to stop the work till a shower come.

If the tobacco field has not been manured, a supply of superphosphate or prepared guano should be at once procured, and strewn broadcast on the ground, at the last harrowing. When the plough is used to checker for the hills, the fertilizer will be put in position to be drawn into the hills where it will be most effective.

Plaster is used on the plant in small quantity, immediately after weeding, and some have followed the practice of plastering a second time broadcast, at a later period of growth. This is, however, not to be advised. The effect of plaster is to injure the quality of the tobacco, and in the heavier class of soils it is objectionable on this account, except in very small quantities to stimulate the early growth.

POTATOES.

It is during this month, that the main crop of potatoes should be planted, and not before the middle of it. We have repeatedly given the result of our own experience, and that of others, in this particular. A crop planted earlier begins forming its tubers in the midst of the excessive summer heat and drought, and is forced to maturity before they can be fully developed. It is thus almost sure to be cut short. Planted later, the process of development goes on during the moister and cooler weather of September.

There is some caution to be observed in planting at the time suggested, lest the germination of the seed be affected by exposure to the hot sun. The cutting of the seed may be done some weeks in advance of planting, that the sets may heal. They should be spread carefully in a cool place, where the sun will not reach them. On taking them to the field do not allow them to be exposed to the hot sun. Let the furrow be opened immediately in advance of the planting, and the earth be thrown back again before it can dry. Such precautions will ensure the regular coming up of the seed, which is liable to be destroyed without them.

HAY HARVESTS.

The harvest of the earlier grasses will soon be on hand. As to time of cutting clover, we have thought, for some years past, that the common practice delays it too long, and that the consequence of such delay is the very bad quality of the article; the black stems, the burnt leaves and the impalpable dust that unfits it especially for horses. The common indication of fitness for the scythe is the turning brown of two-thirds of the bloom. We dare to suggest that a better rule would be to cut where the bloom is well developed, and before it is browned at all. Cut at this stage of progress, and cured quickly, without such exposure to the sun as will scorch and crisp the leaves, it will make a winter provender for cows, superior to any other, and for horses, hardly inferior to the best.

Professor Horsford determined by experiment that the clover cut when the heads first begin to appear, produces only 0.80 *per cent.* of sugar; but when fully developed 1.15 *per cent.* of sugar—very near fifty *per cent.* more than that cut first. "If clover," he says, "is not cut when sugar is most prevalent, it goes to perfect the seed, and the same loss of nutriment is the result."

Orchard grass should be cut when in bloom. It makes very poor hay if allowed to stand longer.

WHEAT HARVEST.

Have every thing in readiness for the harvest, at whatever time it may come on.—Engage, at once, such extra help as may be needed. Provide necessary implements and get others in proper order. When this important crop is fit for the scythe, there should not be an hour's delay, in securing it against the vicissitudes of the season.

As to the precise condition in which it may be advisable to harvest the wheat, it is difficult to determine it by any rule. There are the strongest reasons why the crop should be cut at the earliest time allowable. The quality of the grain is injured by too long delay, and it is most unwise to have the crop exposed to the changes of weather a day longer than necessary. Yet it is not safe to follow the advice, so vague in its character, of cutting a certain number of days before the grain is ripe. The best advice we can offer is to watch carefully the progress of the ripening, and begin the first hour the grain may be safe from shrinking. This will be when it is passing out of the milky state. Let the risk of loss be rather on the early than the late side

—rather in a little shrinkage, than in the damage to quality and quantity, by too long delay.

The Vegetable Garden.

JUNE.

Vegetables of almost every kind will need close attention during the month. The grass should be strictly kept down and the surface loose.

Early Crops.—As these pass away, let the ground be cleared of their remains, and prepared for late ones. Spinnage, lettuce and radish, may give place to late beets, cabbage and celery. These may be planted, too, between the rows of early peas.

Cabbage, Cauliflower, Broccoli.—Make sure of an abundant supply of plants for these crops, by sowing again, if necessary, and forcing with liquid manure.

Cucumbers—May still be planted for table use, and in July, for pickles.

Cymblins—May still be planted.

Celery—May be planted for early use, the principal crop not till July.

Egg-Plants—May still be planted. They are slow growers, and should be pushed forward with liquid manure.

Peas and Beans—Planting may still be made for succession crops.

Roasting Ears.—Plant for late crop.

Lima Beans.—Make sure of crop of this vegetable.

Tomatoes.—Put out an extra supply of these that there may be enough for winter use. They can be so well preserved that no family should be without them in winter.

Peppers.—Plant out these.

Onions.—If the tops of these be very luxuriant, press them gently to one side, and bend them down. This will check the flow of sap, and cause the bulbs to form. They should be weeded very carefully, without disturbing the roots, and no earth drawn to them. Seeds may be sown for pickles, and sets, for another year.

Herbs.—As the garden herbs come into flower, let them be cut and dried in the shade.

Liquid Manure.—It is very desirable to have on hand a supply of liquid manure to be used for such things as may need vigorous help. Young plants, of weekly growth, may be invigorated and protected from insects by an occasional application. It may be made by pouring water upon manure of almost any description, which should be allowed to stand, with an occasional stirring. The elder leaf is very offensive to many insects, and may be thrown into the liquid to give it more efficiency in this respect.

The Fruit Garden.

Newly-planted trees should, by all means, have a mulch of straw, leaves, or other coarse litter thrown around them, to the distance of three to four feet from the stems, before very dry and hot weather sets in. In the absence of these they must occasionally be well watered in dry weather.

Apricot, Nectarines, Plum and Peach Trees should be thinned in due time by those who are fortunate enough to have a full bearing. Let such fruit as falls, being punctured by the curculio, be gathered up and destroyed.

Grapes.—Stop the shoots before the bunches of grapes, and train wood for next year's bearing. Young vines coming into bearing, should not be allowed to bear full crops—the less the better, until they have age and strength. Encourage growth of foliage, and pinch out the points of strong shoots, to give strength to weaker ones, and so make a uniform growth on the canes.

Strawberries—While in bearing will be much benefitted by frequent watering, if the season be very dry. If new beds are to be made for next year's use, the sooner the better, if you can get a favourable season for transplanting. Otherwise transplant the runner-plants into a shaded border, where they can be protected and watered, and put them into their permanent beds in September.

The Catawissa Raspberry.

We don't entirely agree with our friend, Thomas Meehan, respecting the Catawissa raspberry, who admits that if properly managed it is productive and valuable as a late sort. He says, or is represented to say, "all that is necessary, is to cut it down in the spring to about two feet, and pile plenty of manure about the roots on the surface of the ground." Why cut it down in the spring, and why to two feet? We were among the first to cultivate this raspberry in this neighborhood. We commenced some twelve years ago by pur-

chasing six plants. Subsequently one plant was sent to us by Col. Paxton, of Catawissa, who originally discovered the raspberry, growing in the old Friends' burying-ground at that place, and we found it to be identical with the others. Our own rule has been to cut the canes down even with the ground the last of November, cover with manure and let alone. The manure answers as an excellent mulching the following year. By this means the whole strength of the stool or roots is thrown into the *new* wood, and a far more productive crop is obtained. It begins to ripen about the 20th of August and continues to furnish a supply far into October, if the season is favorable. We have had them upon our table on the 11th of November. The poor crop which the foot of the previous year's wood will afford is not needed when there are plenty of other berries for early summer use, and it detracts just about in the same proportion from the fall crop. We think highly of this fruit and have a profuse supply from about twenty-five stools every year without any signs of the stools running out.—*Germantown Telegraph.*

The Flower Garden.

This is the season of especial beauty in the Flower Garden, and of enjoyment to the cultivator. The flush and glow of the summer bloom of flowers—

"The trees, and the blue sky, and sunshine bright"—

these are the rewards of the faithful and loving tender of the Flower Garden. Let us not be too busy to enjoy them. There are some things to be looked after however.

Seedling Plants.—There will be many of these now large enough to go into the borders. Stock Gillyflowers, Wall Flowers, Sweet Williams, Canterbury Bells and many others.—Water well when planted, unless the ground be wet, and, if practicable, shade them till rooted.

Bulbous Roots—When thoroughly ripe, should be taken up, dried several weeks, and then packed in dried sand or wrapped separately in paper till time to plant again.

Perennial Plants.—Cut off the flowering stems of such perennial plants as have finished their bloom, except when wanted to save seeds from.

Dahlias.—Have these supplied with neat stakes, and kept tied up as they advance in growth.

Flowering Shrubs—Newly planted out, should be mulched before the summer drought begins.

LAWN.

Keep the grass cut and the walks firm and well rolled; pulling out weeds from the latter by hand. The gravel should have clay enough with it to make it pack firm and smooth, and should not be chopped or otherwise disturbed. Gas tar, coal ashes, and gravel, make a good walk, if the smell of the tar is not objectionable. The walks should be made firm and smooth by rolling when wet, and kept so.

Fall Flowers.

To produce an elegant effect in the flower garden in October and November, sow now seeds of the double white wall-flower-leaved stock. As soon as the plants are large enough to be transplanted, put each one separately into a seven-inch pot and plunge the pots to the rims in any out-of-the-way place. They will need no care until September, when they will commence to bloom. Reject those with single flowers as soon as they are discovered. If the seed is good, nearly all the plants will prove double. Early frosts, which destroy many other bedding plants, do not have the slightest effect upon this stock. In October they may be turned out into any of the beds where the plants have been killed, and their masses of double white flowers will attract attention from every one. In our own garden we had a fine show until the 10th of December, last year, long after every other bedding plant was destroyed. This stock grows to the height of but nine inches and the same in diameter across the plant.—*The Horticulturist.*

☞Forty thousand barrels of cranberries, it is estimated, will be the crop of New Jersey. Ocean County furnishes 16,000 barrels. New England, Michigan, New-York, North Carolina and other localities will produce probably 50,000 barrels additional. It is thought that the value of the crop will be not less than $1,200,000. In this State (New Jersey) once valueless swamp lands are now worth $1,000 per acre for cranberry culture.

There are 22,693,427 acres of unimproved land in farms in Texas.

An Essay on Colic and Bots in Horses.

Written for the "American Farmer" by G. H. Dadd, V. S., Baltimore, Md.

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Continued from May number—page 327.

BOTS.

I have associated the subject "Colic" with that of Bots, because it often happens that when a horse is tortured with either flatulent or spasmodic colic, and stands with his head turned towards the flanks, some persons are apt to conclude that he is tormented with "bots," and in view of giving the so-called "bots" their "ticket of leave," the animal is compelled to swallow a juvenile apothecary shop, including *pounded glass*, more likely to kill than cure. I must confess, however, that the subject of bots brings me into "deep water," as the saying is, for very many horsemen, and farmers, too, have always entertained an idea that the bot is a mortal enemy to the equine race and is always injurious, and I often fail to succeed in convincing men of the real facts in the case. I hope, however, on this occasion to convince some of our readers that bots are not quite so destructive to horses as many persons have been led to suppose.

Mr. Bracey Clark, who has paid considerable attention to the subject, informs us that "bots are not, properly speaking, worms, but are the larvæ of the gadfly, which deposits its ova on the horse's body in such a manner as that they shall be received into his stomach, and then become bots. When the female fly has become impregnated, and the ova are sufficiently matured, she seeks among the horses a subject for her purpose, and approaching it on the wing, she holds her body nearly upright in the air, and her tail, which is lengthened for the purpose; she approaches the part where she designs to deposit the ova, and suspending herself for a few seconds, suddenly darts upon it, and leaves the ova adhering to the hair by means of a glutinous fluid secreted with it. She then leaves the horse at a small distance, and prepares the second ova, and poising herself before the part, deposits it in the same way; the liquor dries and the ova become firmly glued to the hair. This is repeated by various flies, until four or five hundred ova are sometimes deposited on one horse; they are usually deposited on the legs, side and back of the shoulder; those parts most exposed to be licked by the animal. In licking, the ova adhere to the tongue, and are carried into the horse's stomach in the act of swallowing. The bots attach themselves to the horse's stomach, and are sometimes, though less frequently, found in the first intestine. The number varies considerably; sometimes there are not half a dozen, at others, they exceed a hundred. They are fixed by the small end to the inner coat of the stomach, to which they attach themselves by means of two hooks."

Let us now, briefly, enquire into the history, habits, &c. of some of the lower orders of parasites, and we shall perceive that the presence of bots in a horse's stomach is no deviation from the general rule which seems to obtain in all created beings.* In the study of animal physiology, we discover that animals and insects require the operation of certain forces in order that their peculiar vital properties shall be manifested. They all require food, water and oxygen; food, for the development of organized tissues; water, to maintain an equilibrium between the solids and fluids, and oxygen, for promoting various changes, uniting some particles of the fabric for special purposes, and disengaging others destined for excretion. These agents have to be obtained under varied circumstances. The number of the different species of reptiles known to naturalists is about thirteen hundred, and there are at least one hundred and sixty thousand species of insects. Among this vast assemblage of animate forms, a great proportion of them obtain food, water, and oxygen in a situation and at a temperature which is most congenial to each species; each one of which exhibit great variety in organization and

*"It is a curious fact that numerous parasites do crawl over the surface of our bodies, burrow beneath our skin, nestle in our intestines, and riot in propagating their kind in every corner of our frame, producing ofttimes such molestation and disturbance as to require the interference of medicine. Nearly a score of animals that have their dwelling-place in the interior of the human body, have been already discovered and described, and scarcely a tissue or an organ but is occasionally profaned by their inroads. Each, also, has its special or its favorite domicile. One species chooses the heart for its place of abode; another inhabits the arteries; a third, the kidneys.—Myriads of minute worms lie coiled up in the voluntary muscles or in the areola tissue that connect the flesh fibres. The guinea-worm and chigoe bore through the skin, and reside in the subjacent reticular tissue. Hydatids infest various parts of the body, but especially the liver and brain. A little fluke, in general appearance much like a miniature flounder, lives, steeped in gall, in the biliary vessels. If you squeeze from the skin of your nose, what is vulgarly called a maggot (the contents of one of the hair pellicles), it is ten to one that you find in that small sebaceous cylinder several animalcules, extremely minute, yet exhibiting, under the microscope, a curious and complicated structure. Even the eye has its living inmates; but it is in the intestines that we are most infested with these vermin."—Watson.

habits—hence the necessity for that diversity in their geographical distribution which seems to surprise some of us.

Each species of reptile and insects, or at least very many of them, carry about with them, in their own organization, the fertile embryonic habitation for successive increase and development, and all are, to a certain extent, dependent on one another for vitality and food. It has been truly said that there is "life within life." Begin, for example, with the body of man, and we shall find that it is occasionally infested with thirty-nine distinct species of entozoæ. These are not confined to a local situation, like the bots in the stomach of a horse, but some are to be found in the eye, bronchial tubes, glands, kidneys, urinary bladder, gall bladder, liver, intestines, muscles, blood, &c. There are also several species of entophytæ to the number of ten, inhabitants of the skin and mucous surfaces. So that man can boast of a greater number of living parasites, within and about his body, than we have as yet been able to find in the body of his servant, the horse; and if the former can carry about in the living citadel, such a myriad host of active, living parasites, often without much inconvenience, and he being the weaker of the two, why should not the horse, who is the strongest, be able to endure the presence, and furnish nutriment, for the few bots that occasionally locate in the stomach, and be able to perform ordinary work without inconvenience?

Some of the inferior orders of creation are the receptacle of immense masses of parasites. The grasshopper, for example, is sometimes infested with a parasite known as gordius—a sort of hair worm—which some persons have erroneously supposed to be a transformed horse-hair. Several of these coil themselves in the digestive cavity of the former, often penetrating its abdomen, thorax and cranium; the weight of the parasites often exceeding that of the body of the grasshopper, yet we often see and hear the latter skipping, jumping and chirping, notwithstanding this parasitic mass, just as freely, perhaps, as others not so infested.

Then consider the condition of swine; we frequently find in the porcine liver a vesicle, or sac, filled with fluid, apparently possessing no further, or no real organization; but examine it carefully and we shall find within its tunic, other sacular cells in various stages of development; these are all fœtal hydatids; they increase in size until the parent sac is so distended that it finally bursts, and thus liberates a multitude of parasites, which, in their turn, undergo the same evolution, becoming, each, a parent hydatid, producing subsequent generations, which diffuse themselves over the whole body of a pig; hence arises that peculiarity in pork known as "measels."

His body, also, is sometimes completely infested with parasites known as Trichinæ Spiralis, dwelling in myriads in the muscles of the body; yet no indication of the presence of these worms seems to have been afforded in those instances in which the condition of the animal in whom they were found was known, during life. The intestines of the pig are ofttimes full of worms known as *ascaris lumbricoides*, and these parasites are so prolific that naturalists have calculated many millions of ova within the body of a single female. Many of these perish, yet a part of them, at the proper season, are deposited within the intestines of the pig, who, notwithstanding, grows fat, and after passing from the hands of the butcher, furnishes savory meals for the lovers of pork.

Sheep also are infested with various forms of entozoæ, yet it is very rare that those animals suffer any inconvenience from the presence of the parasites, except when present in large quantities. I might go on to show that every living being is more or less infested with parasites, and that almost all parasites are in turn likewise affected, but the examples here offered must answer my present purpose. The very atmosphere we breathe, and which serves as the purificator of the vital current—the blood—teems with an innumerable host of living, organized sporules and—invisible to the naked eye—infusoria. The water which serves to quench our thirst, and plays so important a part in the economy of man and animals, whether it be in lake, pond, spring, or gully, contains crowds of parasites, or animalculæ; at times so numerous are they that several hundred thousand have, by means of magnifying lens, been discovered in a single drop of water. Yet such water is good and pleasant to the taste, and is not injured thereby, neither is it injurious to man.

Dr. Leidy states, that he has at various times purposely swallowed large draughts of water containing myriads of animalculæ, with-

out ever perceiving any effect; and he combats the idea that diseases are produced or propagated by parasites taken into the stomach in this way. The most curious feature, however, in the history of parasites, is their extraordinary powers of multiplication, which is doubted by some persons, but it is well known to others, that some species of these creatures are capable of producing a hundred repetitions of themselves, and the process can be repeated ten times in a season. The common white ant is capable of depositing ova at the rate of eighty thousand per day, for several successive weeks, and the common flesh maggot is generated by the million, in the course of a few hours; and as regards growth and development, the common flesh fly and the caterpillar increase in weight two hundred times in the course of twenty-four hours.

But the bot is a creature that does not multiply nor increase in bulk at this rapid rate; he may be set down as a "slow coach," and when once located in the only domicil that he ever inhabits, (the stomach of a horse) it becomes his abiding place for a period of nearly twelve months. The bot is a sort of aristocratic entozoa; he lives in the upper region of the stomach; he seldom intermixes, or associates with the common parasites of the intestinal tube. The little creature seems to exercise considerable tact in selecting his abiding place, although he has but a "*squatter's*" title to it, yet his location is the best and safest in the whole "*diggings.*" He is in the upper and anterior part of the stomach, where the fluids—poison or medicines—with which you are about to coax or drive him off, are inoperative—for they merely act as a shower bath—and pass immediately through the stomach into the intestines, where all the fluid a horse drinks is generally found; therefore such remedies do not disturb the bot. Then, again, the bot is usually located on the *cuticular* part or coat of the stomach; a membrane as insensible to pain as that which gives an interior lining to the gizzard of a chicken. This part possessing but very little vascularity is not susceptible to the action of medicine or any of the ordinary bot remedies, and the bot being within his own castle, his suctorial disk, or mouth, imbedded in this non-absorbing membrance of the stomach, can refuse to imbibe the proffered dose, which, however, often succeeds in destroying the horse.

Another reason why medicine does not act on the bot; the external surface of its body is impervious to fluids—non-absorbing—insensible, composed of bristles in rows, and intermediate tissue, identical in structure with that of the claws of birds, and nails of man; in fact the bot will live for some time in strong acids; they may be kept in proof spirits for weeks, and even months has not sufficed to destroy them; they will then, on being washed and exposed to the sun's rays, give evidence of vitality.

It was formerly thought that the bots were capable of perforating the walls of the stomach; but this opinion is now generally exploded. They do not possess the means, if they had the inclination to bore through the stomach. Yet as some wonderful stories are often, at the present period, related of bots burrowing through the stomach, it may be proper for me to refer to that subject.

The stomach of a horse is the nursery and home of the bot, its natural habitation; here it generally remains during its minority, or until it is fully developed and capable of exercising an independent existence, or of undergoing metamorphosis into the gadfly.—Destined therefore by the law of nature; which localises all equine parasites to their respective tissues and organs, out of which they are very seldom found, and then merely by accident; the little creature is too comfortably esconsed ever to attempt an escape through the stomach into the abdominal cavity, where it would be out of its element; if the period has arrived for the bot to vacate its stronghold it chooses the safest and ordinary route, which is through the alimentary canal—intestines. The month of May is usually the period of their maturity; at this season the horse being at grass the bots will leave him.

Bots are occasionally found in the abdominal cavity, but if the stomach of the dead horse be carefully examined, it will be found to have been ruptured, either as a consequence of disease—ulceration—or from over-distension by gas. Very many cases of flatulent colic terminate in rupture of the stomach, or from decomposition.

[To be continued.]

☞Treat your horses with that kindness which is characteristic in all the actions of a merciful man; no animal will appreciate it better or respond to it with more gratitude than the horse.

Remarks on a New Mode of Curing Tobacco.

Continued from May number.

I now come to one of the most important parts in the management of this valuable crop, viz: curing. This is usually done by putting it in the house directly from the field, 6 or 8 plants to the stick, and stick 10 or 12 inches apart in the building, trusting to the uncertainty of the weather to dry it. If the fall prove favorable a fine crop may be saved in this way, but if on the contrary (which is not unusual) the weather should be wet and foggy, from one-third to one-half of the year's work is lost in quality, to say nothing of the loss in pounds, which is very considerable—house burnt tobacco (as the phrase is) is much lighter than a sound article. Owing to the great uncertainty, which always attends the curing in the natural way, I adopted several years ago, Bibb & Co's Tobacco Curing Apparatus, with which I have been entirely successful, not only saving my whole crop from injury, but greatly enhanced if not doubled its value. The "Furnace" is so arranged in a barn, as to take up but little room, the pipes running so near the floor, the hands walk over them without difficulty, enabling the planter to fill every part of the building, except a small space near the apparatus.—The heat is distributed very uniformly throughout the barn by means of two distinct sets of pipes—one set conveying the smoke to the chimney or smoke stack, and the other distributing hot air, drawn off from under a jacket thrown over the "furnace." This jacket answers the double purpose, of protecting the tobacco from scorching overhead, and holding for distribution the surplus heat at the furnace-end of the building. Either wood or coal may be used in firing with this arrangement. My plan is to use wood (of any kind well seasoned) during the day and up to bed time, when two or three bushels of coal are thrown in, which insures ample heat for the night, the door of the barn may then be locked and the fireman retire.

The only care necessary on the part of the planter, is to see that the fireman does his duty. I am governed entirely by a thermometer, making a rule to examine this several times a day, and if not up to the prescribed heat, call the attention of the operator to the fact, requiring him to be more attentive. The time required to cure a houseful (being previously yellowed) is four or five days. The fire should be then suffered to go out, the doors and windows opened, and by the first or second morning thereafter (the night being calm) it will be sufficiently soft to remove to an adjoining barn or tight-sheds and closely stowed away. The planter may then proceed to fill as before. I would here caution those who intend using the furnace the coming season, not to put more than six or eight plants on a stick, nor put the sticks closer in the house than eight or ten inches apart, unless previously scaffold and kilned by the sun; in that case, six inches will be enough. I have found by experience if put closer the tobacco will sweat, and be much injured notwithstanding the fire. Here I close my remarks upon this branch of the subject, as persons purchasing the furnace will receive circular with minute directions for managing the same, amount of heat required at the different stages of curing, &c.

STRIPPING AND ASSORTING.—This operation is one of great importance, and should be done with care and judgment. The different qualities and colors must be separated carefully; the leaves in a bundle ought to be very nearly the same length, and the bundles a little above the size of a man's thumb; smoothly tied with a leaf corresponding in color, capped at the head so as to conceal in part the end of the stems. This gives a very neat appearance and adds to its value. After tying, the bundle should be opened and placed against the breast of the stripper, smoothed down with one hand and laid straight by his side. Tobacco should never be thrown in a common pile (as some do) and necessarily tangled, but ought always to be kept straight.

I arrange my hands for stripping in this way: those that I appoint to cull, after taking off the trashy leaves near the butts, throw all stalks containing yellow in one pile, all bright or red, in a second, and all dull in a third. I then place the other strippers, at the different heaps according to the care with which they assort and tie. The man who strips yellow, takes off all leaves of that color, and if there should remain any bright on the stalk, throws it to the one stripping that quality; and in like manner the bright stripper, throws to the man stripping dull. By this arrangement every one has his own work to do, and the owner (whether at the barn or not) can by making an examination of the different lots, see who assorts properly. I have found some difficulty at first in breaking the "freedmen" to my manner of doing this work, but by carefully instructing them, and thus exciting their pride, at the same time assuring them that under no circumstances, would I allow my stripping to be done in any other way, have succeeded in some short time to my satisfaction.

CONDITIONING.—I find from experience fired tobacco is much more easily conditioned than air cured, and in consequence, have abandoned the old system of sticking and hanging up to dry after stripping; as this very much disfigures the bundles, and in very damp weather not unfrequently changes the color, and the tobacco is otherwise injured from its exposed condition. First cover with tobacco sticks the tier immediately over head, and on this wind-row the tobacco in round heaps about four or five feet in diameter. The bulker standing in the centre, the tobacco is passed to him, three bundles at a time, by an assistant, he lays it down straight with heads out and tails in, forming a circle around himself, and so continue until the heap is about three feet high, and then draws himself out by a tier pole over head. Next he proceeds to cover (if fine) with a single course of in-

ferior tobacco, or what is better, corn blades, upon which a few sticks are laid—this secures it from dampness or dust.

In these wind-rows it remains until the first warm weather in spring, when it is examined, and if found too soft, is shaken out and changed to another place; but if found sufficiently dry and sweet (which is usually the case) the first damp time thereafter, it should be put in large four or six course bulks and heavily weighted, when it remains soft and in proper condition for packing.

PACKING.—There are different modes adopted by planters of doing this work, all of which may have some advantages. The plan I pursue is the old four course system. The packer, after removing his shoes, gets in the cask, and receiving the tobacco from an assistant—he commenses with outside course, laying down one bundle at a time straight and smooth, with end of heads in contact with the siding; when this is completed, a second course is placed in like manner with the heads upon the shoulders of the first; he then turns and does the same upon the other side; the cask is then lined with a single bundle all around as a protection and completes the first layer. He then crosses the first at right angle, with courses laid down as before and so continues until the hogshead is full. Not more than 600 or 700 pounds of fine tobacco should be put in one cask. I would advise planters to select moderately warm, and calm days to do this work, as tobacco should be packed as soft as possible, without running the risk of bruising; if harsh and windy days are chosen, the article will dry to some extent after being broken out of bulk, and the samples will have a coarse and rough appearance, when taken from the cask, which materially affects the price. In packing fine, bright and yellow tobacco, the bulks should be overhauled, and bundles not coming fully up to the standard, must be thrown out, and bad leaves in good bundles, should be carefully removed, for this is a fancy article, and in order to command the highest price, the samples must be as near perfection as it is possible to have them.

I have thus, Messrs. Editors, in an humble way, given you, what I conceive to be, some of the most important points, in the management of this great staple of our State; omitting many of decided utility, with which the readers of your valuable journal, in the tobacco growing section of Maryland are familiar. That some will object to my method, on account of the apparent care and trouble I take, I entertain not a doubt, but experience has proven conclusively to my mind, that the more care and neatness, in managing this valuable crop, the more money is realized from the outlay.

I would suggest to planters of Maryland to select the best soil on the farm for the growth of fine tobacco; plant not more than 12,000 or 15,000 hills to the hand, manure well, cultivate thoroughly—pay particular attention to *Curing, Assorting and Packing*, and they will be handsomely rewarded. G. W. DORSEY.

Cranberry Culture.

Very few fruits so well repay the enterprise of the skilful farmer as the cranberry; certainly none will bear for a long term of years with so little manure; in fact, none is ever given them except what they get by the annual inundation which their culture requires. The land best fitted for the growth of cranberries is a peat meadow. It must be so located that it can be drained 18 inches below the surface, and flood the same depth above the surface. If not situated so that these conditions can be obtained, it would be useless to expend money on any attempt to reduce it to cranberry meadow. But where these conditions can be commanded, and a good supply of fine gravel, or sharp flinty sand is near at hand, we have the necessary conditions; and operation may safely be commenced. The first thing to be done is to prepare the land for the crop, which is done by draining by ditches about two feet deep, running entirely around the land to be used. The surface must be broken up, and made mellow; if covered with grass and hassacks or bushes, they must be thoroughly eradicated by one or two years' cropping with potatoes and cabbage, or by carting off the sod and bushes. The land must then be graded to a uniform slope from the field toward the ditches, just sufficient to allow the surface-water to run off and not stand in pools. Any slope greater than this will require increased depth of water in flooding, and should be avoided. The sand is spread on in depth from two to six inches—the deeper the peat the deeper should be the sand—and the land is ready for the plants, which should be planted in May or early in June. The land is marked out with a common garden marker in rows a foot and a half asunder, and the cuttings are stuck in by hand about three or four inches apart; the water is kept eighteen inches below the surface until November; the sand is frequently hoed meanwhile, and kept scrupulously clean of all weeds. In November the sluice in the dam is shut, and the water raised to at least eighteen inches over the surface. If less depth of water is used, there is danger that the ice will freeze into the plants, and a freshet might lift the whole bed up by the roots, ice and all together. The water is drawn off in May, the following year, and the hoeing and weeding followed up industriously through the summer. No crop need be looked for this season, the vines

having hardly taken hold of the peat. Flooding is repeated in the same way as the first winter, and, on the third year from planting, we may expect the vines to have considerable growth, and a small crop to be taken. Some weeding will be needed, as the vines do not get full possession of the land until the fourth year; after which they need no labor and no manure, and no care except to flow and drain the meadow as above mentioned. The reason for flowing the meadow in winter is to protect the vines from severe weather; and is kept on in spring to drown out the cranberry-worm, which makes its appearance in May. Where the meadow is so situated as to be flowed suddenly, it is a great advantage, as it enables the owner to draw off the water early in spring to give the vines a good start; and then if the worm should appear in May it can be drowned out by raising the water for a few days, which does no harm to the vine. Another great advantage in being able to command the sudden flowage, is the control which it gives us over the harvesting of the crop; sharp frosts often occur in October, just as the fruit ripens, which renders the berry soft and almost worthless. Where we cannot cover our meadows at short notice on a frosty evening, we must pick the crop before frost comes even if not quite ripe; but, where sudden flowage can be attained, the meadow is put under water at the approach of frost and drained next day to allow the berries to ripen and the pickers to go to their work. Cranberry meadows once established, continue fruitful almost indefinitely; some on Cape Cod have been in constant bearing over twenty years. After several years' growth, the vines need pruning, which is done with a long sharp knife, one man cutting the sod, while another rolls it up like a carpet as fast as it is sheared off. The crop is variable, but often reaches one hundred and fifty barrels per acre, and sells quickly at present for about fifteen dollars per barrel.—*Amer. Jour. of Hort.*

☞A correspondent of the *Country Gentleman* writes to that paper on the way to have pure cisterns, as follows: This spring my cistern got quite filthy, and a great many angleworms in it, and we could scarcely use the water. I procured a couple of live fish and put them in the cistern, and since that time it has been free from worms and dirt, and smell. The fish will live and grow finely.

The Man and the Pear Tree.

We crave pardon of the Philosopher, we know not who he is, to whom we are indebted for the following, that we have done some damage to his talk "About Pear Trees," as first published in *Putnam's Monthly*, by taking it to pieces in such manner, as to make it suitable to the limit of our pages. We should have been glad to preserve it here in its completeness, but for the demand upon us for the more directly practical and paying.—*Editor Farmer.*

"Many people hold, that pear trees are to be desired, because they bear pears, and that pears are to be valued for the palate, because they are rich, juicy and delicious—for so they certainly are. That is the notion which has possessed some brains, and I cannot deny that it is plausible; yet it is mainly a mistaken one—a narrow and carnal view.

"Whoever, I continued, whoever prizes simply his existence—who thinks highly of his presence, values his deportment, and is content with 'being'—in other words, whoever believes life is an end rather than a means, and, therefore, is content to *be*, rather than to *do*—he may think himself happy; but he is mistaken.

"So it is with pears—they, too, are a means, not an end.

"Whoever, having grown a fine pear, is elated, and lays much stress upon the tempting fruit, is in danger of sorrow and disappointment—he may be laying up for himself a future grief. Yet I must allow, that, if the fruit had been nipped by an untimely boy, or arrested by a summer blight, before its juicy flesh had been ripened to perfection, my own sense of propriety would have been shocked; for all things work toward completeness, and thus minister to our satisfaction. Satisfaction, my dear friend—not happiness—is the end and aim of true existence. Consider what it is which satisfies, when we look upon a daisy or violet blooming in the shelter of a rugged rock; upon the cedar, the oak, or the beech, spreading its broad branches over the shadowy plain; upon the field of grain waving in the light of the golden sun; upon the succulent asparagus, pushing through the dark, damp earth—these all come to the fulness of perfection, and we are satisfied with them, for they are complete. It is so with the wood-duck, diving and sporting in the still waters of an inland lake; with the robin, that sings out his

soul to his mate brooding on the sky-blue eggs; with the slow and stalwart ox, who drags the plough along the fertile furrow; with the hound who courses the wily fox, and with the fox who outwits the chasing hound—these all satisfy us, for they are complete; they do *well*, what they are made to do. Is it not so with men, my friend? We find no fault with a man, or a woman, who does a thing well—but are satisfied; and he who makes a perfect pair of shoes, does as complete a thing as he who sets well on a king's throne, or decides justly on a judge's bench.

* * * * "It is therefore desirable that men and women should do that well which they can do, and find out as soon as possible what they can do best, and not waste too much time in tears and complaints because they cannot do something else. The man who raises good potatoes is eminently worthy as is he who makes good verses, busts or coaches, and either of them may be a complete man (and so, great), and satisfactory to himself and his fellow man. It is not the thing done, but the spirit of the man who does it, that God loves.

"Now it will be clear, therefore, that, to the pear tree, it is necessary to bear pears, for that is its vocation, its purpose. It was for that, that the brown seed was dropped into the earth; that when the warm, bursting spring came, it sent down its delicate root, and pushed up its tender top, and unfolded its leaves, and stretched forth its branches, and, when the time came, elaborated its juices into buds enfolding blossoms—fragrant promises of future fruit.

"It is right therefore for the pear tree to bear pears.

"But, for a man, his duty is to furnish the tree with every possible facility and convenience necessary for it to perfect its purpose; for the tree cannot do this for itself. He is to see that there is good soil, and that it is in good heart (not made over rich), and well dug and broken, so that the rays of the fructifying sun can enter it, and the gentle dews sink into it; then he is to plant the tree in it. And let him do that well—for trees are grateful; they like not to have their roots crowded into a small hole dug in a hard soil—no well-bred pear tree will submit to such indignity, and many will die if so treated—but rather into the mellow earth; spread out the roots, and press them among the genial mold, so that they kiss one another; and plant not too deep, but so as to cover with an inch of earth, the neck whence the roots branch; then sustain the stem with a slender stake and the work is done. Whoever has done this will value the warm April sunshine, and the soft April showers, and he will watch in the last of the month till he shall see the unfolding buds; and then the expanding leaves, and the lusty shoots, wagging in the wind, will give him hope. In another year he will wait for blossoms, and when they come he will be thankful. He will see to it, that no marauding caterpillars fatten there, that no curculio whets his tooth in that first fruit; for he will walk in the garden in the fresh morning, in the shimmering noontide, and at the shady evening, and will feel that he has something to live for. He will be the providence of his pear tree, and a worthy man."

Castor-Oil Bean.

Intimations of a revival of interest in the production of the *Ricinus communis* (or *Palma Christi*) have been received from the Southwest particularly, with assurances of its attempted culture as a field crop. Mississippi, Louisiana, Arkansas, and Texas are peculiarly adapted, in soil and climate, to its profitable culture; and many persons in the Southwest propose to engage in the business this spring.

In Illinois and St. Louis, where a successful farm product has been made of it, the following varieties are grown: *Ricinus communis*, early, four feet in height; *R. Spectabilis*, dark green leaves, five feet: *R. Sanguineus*, fruit red, in clusters, stalk dark red, seven feet; *R. Lividus*, stems brilliant red, fruit green, five feet; *R. Leucocarpus*, dwarf, three feet, white fruit, an African variety; *R. Brasiliensis*, brownish yellow fruit, five feet high.

In South Carolina it was reported, years ago, growing twelve feet high; in the vicinity of Vicksburg, Mississippi, it has been made a very profitable crop; in Texas it produces plants of great size and height. From thirty to one hundred bushels of beans per acre have been obtained in different locations, and two gallons of oil, or twenty-five per cent., obtained per bushel if the seed are good; but twenty to twenty-five bushels are an average yield in Illinois and Missouri. The *R. Lividus* is a native of the Cape of Good Hope, and will thrive in a variety of soils of different elevations. In the tropics it is planted singly

ten or twelve feet apart. In poorer soils or more northern localities, a less distance would do. In its native clime the plant bears the first season, grows continuously for four years, and continues to yield for many seasons. The seeds are gathered when the pods begin to turn brown.

It is a common crop in all parts of India. The oil is there extracted by boiling in water and skimming off the oil—a very crude and wasteful mode, and the oil thus obtained is used exclusively for burning.

St. Louis has heretofore been the centre of production in this country, and the principal place of manufacture. The culture required is very much like that given to corn, and the soil should be the best of corn land; the planting should be done with the first warming of the soil, after danger from frosts is over; the hills should be five or six feet apart, and even seven or eight if the soil is sufficiently rich to make the requisite growth; the distance should be greater in the South than in more Northern locations. As with corn or anything else, thorough culture pays best. The receipts at St. Louis last year are estimated at 50,000 bushels. The Prairie Farmer says, concerning prices and profits:

The market price is variable. During the past winter the beans in the St. Louis market have ranged from $3.90 to $1.25 per bushel. As the cost of growing does not differ materially from that of corn, the approximate profits can be calculated. At the present depressed condition of the market, an acre of beans would yield about $25, leaving but little margin for profit. The oil is quoted at $2.10 to $2.25 per gallon. As the yield of oil is about sixty-eight gallons per acre, the manufactured oil would amount to about $150 per acre. This gives four dollars to the manufacturer and one dollar to the producer—a division which cannot be regarded as equitable.—*Monthly Report Department Agriculture.*

HILLING UP POTATOES.—The *Cottage Gardener*, of London, says earthing up potatoes diminishes the produce and retards the ripening of the tubers. Long experiments in England have proved this fact, that hilling up the potato will reduce the crop one-fourth. Our farmers must, however, remember that the correctness of this theory depends on the nature of the soil. The potato likes not wet feet. If there is that danger, better plant shallow, and hill up.

Salmon Eggs all Right.

The experiment which has been undertaken by the New Hampshire Commissioners of River Fisheries, of stocking the Connecticut river with salmon, has so far succeeded well.

Of the impregnated eggs deposited at the Cold Spring hatching works, at Charlestown, N. H., over 99 19.20 per cent. have hatched, and have become healthy and very lively young salmon. It is the intention of the commissioners to rear them artificially, till they are ready to go to the sea, which will be a year from next spring. In the fall of next year, 1869, they will return, seeking the sources of the river, and will then weigh, it is estimated, from three and a half to ten pounds, which weight they will soon double and quadruple. It is hoped that before that time all obstructions at the mills on the Connecticut river will be removed, and that nothing will prevent the salmon from ascending the river as high as they like.

If the present plans are carried out in regard to stocking this river, a million or more of young salmon will be put in every year, and of such a size, that they can safely go to the sea and return; and judging from data obtained by experiments tried in English waters, we are authorized to suppose, that by this means, the productive wealth of the Connecticut river will be increased millions of dollars annually, as any one can easily see for himself, by calculating the value of a million salmon of ten or twenty pounds weight.

Great credit is due in this matter to Dr. Fletcher of Concord, who out of several that made the attempt, was the only one who succeeded in procuring salmon spawn for the New England rivers. It should be known also, that the merit of this undertaking, of obtaining salmon eggs for these rivers, is due to the New Hampshire Commissioners, acting independently, and not to the New England Commission generally, as has been before stated. Should the promise of the present be only one-half fulfilled, the time will come before long, when salmon will be a common article of food, and together with the vast quantity of shad which are expected in a few years from our rivers, will very perceptibly reduce the cost of living in New England, and enable the poor man to have every day on his table, food that has long ranked with us among expensive luxuries.—*Mass. Ploughman.*

From the Buffalo Courier.

Brook Trout and other Fish.

A VISIT TO SETH GREEN'S TROUT PONDS—TROUT BREEDING—STOCKING STREAMS.

There is no sportsman in the State, probably, who has not heard of Seth Green and his trout ponds, in Caledonia, Livingston Co., and but few there are, among the fraternity, who are not personally acquainted with this ardent disciple of Nimrod. Not to know Seth Green, either by direct acquaintance or reputation, is almost to argue one's self unknown. We had heard much of his trout ponds, and had determined to learn something of his *modus operandi* of raising brook trout artificially.

Accompanied by C. F. Sternburg, D. H. Winans, and Robert Newell, we took Saturday's morning train on the New York and Erie, and in a little over two hours reached Caledonia station. A walk of about two-thirds of a mile brought us to the famous trout pond, where the party were warmly welcomed by the proprietor. Mr. Green took possession of his present quarters, and began the artificial breeding of trout about four years ago. What victories he has achieved remain to be seen; and first of the natural advantages supplied to him.

SPRING CREEK

takes its rise in numerous springs in Caledonia village proper, which extends over 5 or 6 acres, and average from 3 to 5 rods in width, and from 4 to 6 feet deep when it takes the form of a stream. The average temperature of the spring and stream is about 50 degrees, and the latter never freezes over. About ¾ of a mile from its source Mr. Green has taken charge of it for his purposes, and after yielding what assistance it affords, it continues its way ½ mile below, where it empties into Allen's Creek, which in its turn joins the Genesee River about 12 miles above Rochester. Mr. G. stocks this stream every year with from 100,000 to 200,000 trout, and it is needless to say that brook trout are found here in abundance. Mr. G. has tapped the stream about 20 rods from his house, and by this means the ponds in which he keeps his trout are always supplied with the purest spring water.

THE TROUT PONDS

are half a dozen in number, walled in with stone, with gravel beds, and containing from one to five feet of water; the small ponds and shallow water being devoted to the younger trout, and the large ponds and deep water being set apart for the older members of the family. To each pond there is necessarily an inlet and an outlet, and in the larger ponds trout are permitted passage up the streams leading from where the river is tapped, but here they meet with a barrier which they cannot overleap, and so content themselves in the stream or pond when ready to spawn. At the head of the largest stream is a miniature wheel, which is turned by the action of the water. This furnishes exercise for the trout, which leap upon the wheel as it revolves, only to be precipitated into the water again below the dam. How far this satisfies the ambition of the fish we are not prepared to say. In these streams the ridges and piles of pebbles, which have been heaped up along their beds show how industrious the trout are, and what preparatory labor they deem necessary to the welfare of their spawn.

The ponds swarm with trout, and we could watch their antics in their translucent homes for hours without weariness. One does not witness so interesting a scene often in a lifetime. Around the bottom angles of the pond are heavy growths of moss, very pretty to look at and attractive as matters of ornamentation; but this moss literally swarms with insect life, and affords unfailing food for the trout. A handful of this moss plucked up from the water reveals thousands of insects—indeed the whole bunch becomes charged with animation in one's fingers. It should be understood that the ponds are not used for fishing purposes, and the proprietor would no more think of supplying his table from them than he would think of committing an offence against the game laws of the State. Mr. G. is on good terms with his water family, knows the male and female, and scarcely ever commits the error of stripping a trout that has already spawned. For the purpose of artificial breeding he catches his trout in a large bag at the mouth of a pond, generally driving them down a narrow stream into it, and afterwards empties them from the bottom of the bag, which has an opening in a corner of it, that is tied with a string while being used as a net. The captives are deposited in buckets of spring water, and conveyed to the

HATCHING HOUSE.

This building is humble in appearance, and of cozy interior. It is here that Mr. Green

hatched over 500,000 trout spawn last spring, and will hatch many a million spawn this season. Here the spawn is stripped from the female trout, artificially impregnated and laid in the hatching beds. This is a process requiring nice manipulation to avoid the destruction of the fish, and delicate treatment to preserve the ovum. In order that the reader may know what these hatching beds are like, he will need but to picture to himself half a dozen or more flat-bottomed troughs, about 3 inches deep, 14 inches wide, and 24 or 25 feet in length, and divided into apartments or beds about 18 inches in length by wooden slats which allow the stream to run over them. Each bed, then, is about 14 inches wide and 18 inches in length, and each trough separate from the other and fed by its own stream.

At the bottom of each trough is a layer of nice gravel. This is covered with glass to prevent the growth of fungus or the accumulation of slime or sediment, which is always destructive to the spawn. Over the glass is a pebbly bed making a depth of about two layers of gravel. On this bed the spawn is deposited, and remains till it is hatched. The troughs are almost 3 inches higher at the head than at the bottom, and the stream which flows over each of them passes through a miniature ridge of gravel, which receives it as it flows into the trough and acts as a filter, and prevents the sediment from reaching the spawn. The water over the spawn is about an inch deep, runs about 12 feet per minute, and would pass through a half inch hole with a three inch head. Mr. G. puts about 10,000 eggs in each bed, where that number will thrive for 20 or 30 days, after which he fills his orders, and reduces the number of spawn in each bed to one-half or one-third.

The average temperature of the water is 45 degrees, and the fish hatches in 70 days.—Upon getting out of his ovum, the trout carries his little amber sack with him for 45 days, relying on it all that time for nutriment, and after clearing himself it is deposited in a small pond, where for sometime it is fed twice a day with liver cut or chopped to the consistency of blood.

We can scarcely conceive of a more interesting day's sport, than these beds afford for microscopic examination. The spawn, in its particular color, corresponds in its early stages, with the color of the flesh of the parent fish, but as the incipient trout develops, it becomes the color of amber, and is about as transparent. The young trout hatched and carrying around with him his golden sack, is less than an inch long, and a few thousand of them in a bed, at a short distance looks like so many carpet tacks in motion. We saw the spawn in every trout of every stage of its development in the beds, and age in ponds, and learned satisfactorily how little information we had gathered from natural history on the subject.

The brook trout is over a year old when it spawns, and its first spawn averages 300. When two years have passed its spawn is about 600; three years old about 1200; four years old about 1500, and from five to six years old the spawn runs from 2000 to 5000. Mr. Green has stripped a 3-lb. trout of 4000 spawn. Now when it is known that he can hatch at the very lowest calculation 95 per cent. of this spawn, the figures in favor of artificial breeding becomes enormous. Some interesting calculation might be made from this data—going to show how readily our exhausted trout streams might be stocked, and what immense benefit would accrue to people who cannot now afford to indulge in such luxuries.

A BEE QUESTION.—At a late meeting of the American Institute Club this question was propounded: "Is fruit injured by the honey-bee extracting honey from the fruit blossoms?" No response was made to the inquiry by the Institute Club, but the Essex Institute, Salem, Mass., was less reticent. Mr. Putnam, a member, took the matter up and contended "that the visits of the bees to the blossom was a positive benefit as far as it caused the distribution of pollen from blossom to blossom. The removal of the honey it was not probable was a loss to the blossom. Mr. Goodell recalled an article in the *Naturalist*, in which the writer hinted that it was part of the divine economy to put in a little honey into each flower to tempt the bees to come and get it, and at the same time pay for the honey—a fair bargain—by the labor performed in transmitting the pollen." While taking the side of the bees, on this question, Mr. P. was free to admit that they were bold and persistent thieves, taking sugar or anything sweet without permission asked, and ready to fight on the least hint of trespassing on the rights of property.

Milch Cows and Calves.

At an International Agricultural Exhibition held some years ago at Hamburg, an extraordinary cow, the property of Count Pinta, of Silęsia, took the prize offered for the best milch cow. This cow, on the 115th day after calving, after having traveled five hundred miles to reach Hamburg, yielded 33¼ quarts of milk in one day, which gave 3lbs. 13oz. of butter. The following extract gives his mode of treatment of cows and calves, for which he was distinguished.

"The new born calf is sprinkled with meal and laid before the cow, which latter remains chained to her post, which then licks the calf all over. The calf is then taken away from the cow, and brought back to sucking only three times a day, at milking time. So the calf acquires from the first day the habit of regular meals punctually given.

"After the calf has done sucking, the cow is stripped clean. In other cases part of the milk is first taken, and then the last milk allowed to the calf. Which of these two modes is adopted depends upon the yield of milk and its richness. I once lost a valuable calf by allowing him the last milk, this containing too much fatty matter.

"In consequence of their abundant allowance of feed, my cows bring large calves, which, at the age of three weeks, after being fed nothing but the milk of their mother, will average 150 to 160 pounds, live weight, (165 to 176 pounds English.) There will also occur many twin births, which shows that rich feeding does not diminish the generative power.

"At the age of three weeks, the calves are removed to a calf-stable, and there receive a drink three times a day, at the same time they used to suck; in the meantime they are allowed hay.

"The first peculiarity now of my mode of feeding is this, that into the drink of the calves I mix a great deal of linseed.

"Another point of high importance is to take prevention against diarrhea. Now looseness of the bowels originates in most cases from acid formed in their stomach. I therefore suspend between every two calves a piece of chalk. Sometimes a calf will not touch the chalk for months; at other times they will eat up the whole piece in a few days.

"I also shear all my cows and calves. One girl will shear two cows or four calves in a day. The shearing helps to keep the skin clean, and greatly increases both comfort and appetite of the animal.

"Another point of great importance is to have the organs of secretion fully developed at the time of calving, especially at the first calving. Our physicians will prescribe fennel tea to women lying-in; this induced me to try fennel tea also on my cows. Upon one ounce of fennel I poured three quarters of a quart of boiling water, let it stand five minutes on a hot plate, then strained it, and gave it to the cow luke warm. The cows are not all fond of this drink; I therefore sweeten it and give it out of a bottle. I give this drink immediately after calving, three times a day for two days, or six times in all. I give the same drink thereafter once a month; in case of costiveness I give it oftener, with the best success.

"It is of great importance to allow milch cows a sufficiency of fatty matter in their feed always. I prefer linseed to any other ingredient."

Culture of the Tomato.

Every one who plants a garden must have experience of the difficulty of dealing with tomatoes as usually grown: they spread over space where they are not wanted; they hug the ground with such persistence that nothing can keep them from it; they rot both when it rains and when it does not rain; and at about the end of September they come to an absolute end of all production. The consequence is that most people choose to purchase such as the market affords, and to pay for defective and unsatisfactory tomatoes at a high price because an ordinary garden does not afford room for them. Having gone through an ample experience of this sort, I by accident attempted a mode of cultivation two years ago which has far exceeded my expectations in obviating the difficulties referred to, and in giving an ample supply of tomatoes so far superior to those usually sold, as to bear no comparison with them.

This mode is a right training of the vines on a high wall—a wall facing south in my case, but one facing east I think will do, while one facing north certainly will not do. Strips of lath nailed on posts or stakes, say eight inches from the surface of the wall, suffice to keep the vines within the enclosed space, but they must also be frequently tied to the lath,

or to nails driven in the face of the wall.—Some trouble is requisite when they are growing most rapidly, but it will repay all the trouble well; being sure to keep the vines from falling or blowing down by whatever driving—tying or lath—may be necessary. I have had no serious difficulty in this respect, nor will any one who ties the vines frequently in July and August: using some soft flax twine, or strong cotton strings.

The result is that the vines grow and bear from the earliest time that any can be produced, until absolutely freezing weather comes in November. I have had them in profusion and in perfection on the vines in two years as late as the middle of November—the fall of both 1865 and 1866 being favorable as regards late frosts, or the delay of absolute freezing weather. And it is remarkable that the tomato plant under such circumstances continues to produce as abundantly to the last as could be desired, without check by any frost or chill that does not absolutely freeze the vines.

The fruit of the tomato is peculiarly an air fruit, requiring the fullest sun, and the most free circulation of air to perfect it. In the shade or near the earth the fruit does not set, and if set, does not ripen. Under the best conditions for the vines in this respect the production is so much greater as to pay for all the trouble of attaining them, even if a wall or trellis were to be erected exclusively to produce tomatoes. And those growing them for market purposes would be as well repaid as private cultivators. I can count up already about eight bushels as the produce of sixty feet of wall, and but twelve inches of earth surface at the foot in which they are planted, a brick wall three feet in width coming next. The vines have in three cases ripened fruit largely at a height of six to seven feet, and the bearing season has begun, or the production of ripe tomatoes, about the 10th of August.

As every practical economy in producing this indispensable vegetable is really demanded to secure good fruit and enough of it, I trust some of your readers who have been annoyed as I have been by the old mode, will try the wall; and by a little expenditure of labor, secure a result practically ten times as great in this item of private gardening.

P. S.—The above manuscript, mislaid at the date of its writing, may now be supplemented by a final paragraph, stating what the experience of this year was. It was that the vines continued green and productive to Nov. 13th; yielded a full supply for daily use to that time; that on Nov. 13th, over two bushels of well grown tomatoes, green and ripe, were picked from perhaps sixty feet of wall, and that of these two bushels, fully half-a-bushel remain all sound and mostly well ripened to-day, December 17th. All of the quantity picked November 13th ripened well, and being used as raw tomatoes.—*Gardener's Monthly.*

Garget.

One of the common disorders in cows is garget, a disease very difficult to manage, although the country is full of remedies that are said to be infallible. In ordinary cases ordinary remedies will appear to cure; in fact light attacks will pass off frequently without any thing being done; but when inflammation suddenly sets in and extends through the whole bag, the udder becoming hard as a stone, the milk drying up so that but little can be drawn off, and that coagulated into a mess of bloody matter, there is work to be done if the original good qualities of the cow as a milker are retained.

We have tried for garget physicking, bleeding, roweling, feeding garget root, saltpetre, &c., thoroughly, sometimes having good success, and at others no one remedy nor all together would effect a cure. We were never able to allay the inflammation in a severe case only by hot applications to the udder, and have had the best success by using strong soap-suds, hot as could possibly be applied with the hand, three or four times a day, giving the udder at the same time a good rubbing, and feeding the cow an ounce of saltpetre morning and evening.

Talking with an old dairyman a few days ago, we were told that he never failed to cure the most severe cases by smearing the bag with soft soap. If the soap is new and very strong it will remove the hair, and perhaps the skin with it, "but this," said he, "will come right again in a short time, and I consider it of but little consequence compared with the value derived from a speedy cure of the disease."—*Ohio Farmer.*

☞ There are sixty-four cheese factories and branches in Oxford Co., Ontario, (C. W.)

A Dog Tax.

The New York *Times* calls attention to the number and value of the sheep killed by dogs in the United States during the year of 1866, as estimated by the Commissioner of Agriculture. The subsistence of the whole number of dogs in the United States, as heretofore stated in the colums of the "Turf, Field and Farm," costs about fifty millions of dollars annually. The value of the sheep killed by them annually is estimated at two millions of dollars, swelling the total loss to fifty-two millions of dollars. Well does the *Times* remark: "These are startling figures to an overtaxed community, and should command the attention of the Commissioner of Internal Revenue. Fifty-two millions per annum lost by dogs, to say nothing of the frightful deaths from hydrophobia which they occasion! We say lost, for with the exception of a very few terriers, sheep dogs, pointers and hounds, they furnish little in the way of set off to the enormous charge resulting from their depredations and consumption of food. Not five in a hundred are of any value. The efficiency of the watch-dog is rendered of but little avail against professed burglars, who use chloroform or strychnine when a regular job presents itself, the former of which they administer even when a door is interposed between a burglar and the more respectable animal.

"What shall be done to save the community from this annual severe loss? A tax by the General Government would afford some remedy, taken from some raw material necessary to our over-burdened manufacturing industry, and put upon each dog. We have been told that such a tax would cost the party which imposed it a great many votes, but we think that more would favor than would object to such a tax. In some States, Virginia, for instance, a State tax on this animal has, we think, been constantly prevented, on the ground that they are to be regarded in the light of *ferae naturæ*, and consequently not as property. But we are inclined to think that the influential gentlemen in Virginia who owned fox-hounds, and who resisted such a tax, would readily find out that they constituted property if a neighbor should interfere with the sport in which they delighted to engage by destroying the hounds which they followed in the chase."

The suggestions of the *Times* are pertinent, but we think it goes out of the way to attack fox-hounds, as witness the following extract: "The situation in Virginia is now favorable to the experiment of this national tax, as there are but few now to engage in the pastime of fox-hunting, and the majority will doubtless prefer that the rich fields of Virginia, now so largely uncultivated, may be devoted more universally to sheep than ever before. The two animals, the common dog and the sheep, can scarcely exist together; sheep owners all over the country are complaining loudly of the havoc among sheep which they occasion."

But few sheep are killed by well-bred fox-hounds. The common curs, aided by the Newfoundland dog, are chiefly responsible for all depredations of this character. The Newfoundland dog, noble as he is in many particulars, is fond of sheep blood, and to gratify his love for such blood, he often becomes a night prowler. But the vagrant curs, the bastard without name or lineage, the offscourings of canine breeds, are the most uncompromising foes of sheep. They skulk about at night, like the cowards that they are, and select the most defenceless members of the flock to wreak vengeance upon. These mongrels are of no earthly benefit, and they should not be permitted to live. Let the General Government place a high tax upon such curs, and perhaps they will not be fostered to the extent they now are. Farmers will not feed the lazy, worthless brutes, when they are made to pay for the privilege of feeding them. But while attempting to exterminate common curs, we should encourage the general introduction of improved dogs. We should make a distinction between the two. People will have dogs about them of some kind, therefore it is policy to take measures to introduce canines of some practical value, in the place of the mongrel curs which are neither ornamental nor practical. If we were consulted we should say encourage improved dogs by exempting them from tax. We trust that Congress will give attention to this matter, for the law, to be effectual, must be national in character.—*Turf, Field and Farm.*

☞ The editor of the "Southern Ruralist" says: We have tried trenching for pear trees, for grapevines, for asparagus, for strawberries, for this thing and for that, and if we have ever been benefitted by it, we don't know it, and don't believe it. Nay, we know that in several instances it has been a decided injury.

The American Farmer.

Baltimore, June 1, 1868.

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Close of Volume.

With this number we close the second volume of our current series, and are pleased to be able, in doing so, to say, that THE OLD FARMER has made rapid progress within the year past towards the recovery of the full measure of prosperity with which it was favoured before the war. Its degree of success under all the circumstances of disadvantage it has encountered, has been much beyond our expectation, and gives sufficient assurance, that only the untoward condition of affairs in the country, lies in the way of a prosperous future.

This is the more gratifying, because it has resulted only from the quiet and diligent use of legitimate means of success, working on the basis of a good name, which *The American Farmer* has made for itself in a career of usefulness. This is the course we propose to continue, and we earnestly and respectfully ask the aid of our natural allies, the friends who read our pages. They can do a great deal for us by commending us to *their* friends, and we find by long experience, that everything gained this way, is substantial gain. We seek no sensational accumulation of names upon our lists, but we do want readers; and such as having joined our Farmers' Association, will stay and keep company with us in the future. We want all the new friends we can get, but want them to become *old friends*, because we like that kind better.

Wheat Cultivation.

We promised in our last, to give such reply to a correspondent at Shreveport, Louisiana, as would meet the demand among our Southern readers, for information on, what is to many of them, a new branch of husbandry, wheat growing. The policy, if not the necessity, of a change of system in cropping at the South, is apparent, and the demand for this information is the result of it.

As to soil for wheat growing, that suits best in which clay predominates. Sandy lands or those of coarse texture, are not considered suitable for this crop, though there are many instances known to us in which the most unpromising sands have been made highly and permanently productive wheat farms. Dryness is an essential quality, and a high, rolling surface is better than low or flat lands, as being better drained, and more quickly relieved of fog and moisture, when there is danger from rust.

The best preparation for a wheat crop is a clean clover fallow, well turned, four weeks or more, before seeding time; though the ploughing is often continued up to the time of seeding. The next best is a fallow of the cow pea, sown early enough to be ripening when the land is ploughed for seeding. We have never favoured the sowing of corn ground in wheat, yet it saves much cost of preparation, and a good crop may be looked for when abundantly fertilized. The pea sown with the corn at its last working, as is common in the Southern States, is of great value as a fertilizer for the wheat, and keeps down the natural growth which, on rich ground, obstructs the seeding. Old sod, or ground foul with blue grass, weeds, or other natural growth, is not favourable for wheat growing, and if used of necessity, should be ploughed down deeply, and the seed put in so shallow as not to disturb the bed lower than three inches.

No ground should be sown in wheat, without fertilizers, that is not capable of producing eight barrels of corn to the acre. There is no crop so uncertain in results when grown upon poor, unmanured land, and scarcely any more certain, if well put in upon ground rich enough or well manured. In the best wheat growing districts, it is a common practice to devote nearly all of the contents of the farm yard directly to the wheat field, during the summer preparation for the crop;

a practice which has the advantage of producing a good crop of grass from the seeds of clover and timothy or other grass, sown with the wheat.

The fertilizers of the market are substituted for this, when it is not practicable. Of Peruvian Guano, or any other that may be equal to it in value, not less than two hundred pounds should be used, sown broadcast. If sown with the drill, in immediate contact with the seeds, one-half the quantity is of equal value, so far as the crop of wheat is concerned. Of course, other fertilizers are to be used in increased quantity, proportioned to their diminished value.

The seeding should be done, if practicable, with a drill having a guano attachment which deposits the fertilizer with the seed. The Bickford & Huffman Drill is of long and well established character. The grain passes through pointed tubes, which run into the soft surface earth, depositing and covering it.—The Star Drill deposits the seed, and ploughs it under with a three inch furrow, and it is claimed for it, that putting the seed in with perfect uniformity, and every grain being perfectly covered at the right depth, much less may be used. It ploughs in the seed, and rolls the surface, leaving the grain properly covered at the bottom of a moderate furrow, the sides of which fall in gradually, ensuring protection to the roots under the most adverse circumstances. Any good drill will economise seed and fertilizer, save labour, and do the work better than it can be otherwise done; and its cost will be well repaid in a single crop of forty acres.

The first ploughing for wheat should be as deep as the nature of the ground will admit. At the time of seeding, it should be as shallow as will suffice for the proper covering of the seed.

The proper time of seeding in the latitude of Maryland, is from the middle of September to the middle of October. As we go South the time may be lengthened to the month of December.

Opinion varies much as to quantity of seed per acre. One bushel with the drill and one and a half broadcast, may be considered the average allowance, increasing these quantities somewhat for late sowing.

The labor-saving implements appropriate to wheat cultivation, are the drill as named above, the reaper with rake attached, which lays the cut grain in readiness for binding, and the thresher. Good threshers now in use, are set upon a wheel-carriage for convenient locomotion, and thresh and clean the grain at the same operation. There is a convenience in this which commends it to many, while others prefer to clean separately with the wheat fan. Drills, reapers, threshers and fans, are all brought to a degree of perfection in operation, that leaves nothing, almost, to be desired.

Location of the Grounds of the State Agricultural and Mechanical Association.—At an adjourned meeting of the Trustees of the funds appropriated by the State and the City Council, held on the 14th May, the property on Herring Run offered by Wm. McCann was selected for the purpose of the Society's Exhibitions, and a Committee authorized to make the purchase at the price for which it had been offered, twelve thousand dollars. It contains 72 acres, is accessible by turnpike and the Philadelphia Railroad, and has many advantages which adapt it to the purpose of the Society. This purchase will leave funds enough in hand to put the grounds in complete order for Exhibitions.

☞At a meeting of the Woolen Manufacturers' Association of the Northwest, held at Chicago, Feb. 15, 1868, it was decided to hold an Exposition of Wools and Woolen Goods at Chicago, on Tuesday, Wednesday and Thursday, Aug. 4, 5 and 6, 1868. It is the design of the Exposition to make such an exhibition of all the classes of wools produced in the West, and of all the manufactured products of these wools, as shall fitly show the present magnitude of the wool and woolen interests of the West, and shall best advance their future prosperity, and by bringing together representatives of the wool growers and wool workers to enable them to harmonize conflicting views and to agree on such course as shall best advance the interest of both parties. It will also prove of great advantage to parties exhibiting, in affording opportunities for effecting sales.

Parties desiring to exhibit wool are requested to send statements of the number and kind of fleeces or samples they propose exhibiting, to G. E. Morrow, office of *The Western Rural*, Chicago, Ill., to whom all correspondence concerning the wool department of the Exposition may be addressed.

Air Wanted.

The air we breathe is as needful to our plants as to ourselves. When we drown, it is not so much from too much water, as too little air, and so it is with the plants. Give the air free course, as well to the roots as the leaves, and much or little water need not trouble us.

An experienced drainer, John Johnston we believe, the Scotch farmer of Western New York, asked permission of a neighbor to allow him to cut a drain through a piece of bottom land, as an outlet for his surplus water. The neighbor refused, on the ground that if the water were taken away from his meadow land it would burn up in the heats of summer. It ended in the other buying the land and draining, and the result of his first year's cropping paid for land and drainage.

This idea as to land suffering in the way suggested, is not, perhaps, an uncommon one, and it is well to have it understood how draining really works in this respect, and that well drained grounds are really better supplied with available moisture in the dryest weather than those which are undrained.

Soils have in various degrees the power of retaining water. Sands have the least power in this respect. A compact loam holds twice as much as sand; a stiff clay, three times as much. If a soil is supplied with water beyond its power of retention, as in long continued rains, the excess flows off, if no obstruction exists. It is left saturated to the extent of its capacity. When this excess has passed away, it is in its proper, sound condition, not wet, solid under foot, and not liable to be poached by the treading of cattle.

During the time that the soil is full of water, as after a long rain, the air is pressed out, and then, as fast as the excess of water flows out, fresh air flows in, and fills its place. All the intervening spaces between the particles of earth give circulation to fresh air.—And this makes the difference between drained and undrained land. If undrained, the excess of water remains and becomes stagnant, and poisonous to many plants; if drained, sweet, fresh air, as necessary to cultivated plants as to man, takes its place. But this air always contains more or less watery vapor, averaging, perhaps, one per cent., but capable of holding more, the more it is heated, so that it is more charged with vapor, in the hottest drought than in cooler weather. When it is suddenly cooled it gives up a portion of its water to any object it comes in contact with. This we see illustrated very familiarly on the outside of a glass or pitcher of cold water in hot weather. The heated air from outside comes in, charged with vapor, and, striking the cold surface, is suddenly cooled, and deposits a portion of its water which accumulates there in great drops of sweat. The same process takes place in the soil, if the air be allowed to pass freely into it. The hotter it is the more moisture it contains; when this vapor comes into contact with the cool soil below the surface, it is condensed and deposited there.—That this deposit is sufficient to make a very material difference in the quantity, is attested by all who see the results of their labors in drained and well ploughed land during our summer droughts. Their capacity for resisting the influence of dry weather is proportioned to the freedom with which the air is allowed access to the subsoil.

The McDonogh School Farm.

We learn with much pleasure, that the City Council has reversed the action of the late Council which located the McDonogh School Farm within the city limits. In recommending this action, the committee of the Council says of Mr. McDonogh:

"The establishment of a 'school farm' in Maryland on a large scale was evidently his most cherished desire, since the sum set apart for this object was larger than all the rest combined. On page 16 of his will, he says, 'I request the trustees to purchase a tract or tracts of rich and productive land, (so that its product may assist at least in support of the institution,) in a situation high and healthy, to contain 300, 400, 500, 1,000, 2,000 or 3,000 acres, more or less, lying within 1, 2, 3, 4, 5, 10 or 20 miles, or even a greater distance from the city of Baltimore, where youths may be taught to labor in all work appertaining to the cultivation of the earth.' The action of the present City Council is intended to carry out the great object the testator had in view.—The newly-appointed Board of Trustees of the McDonogh Educational Fund are Lawrence Sangston, Joshua Vansant, Albert Schumacher, Robert T. Baldwin, John Donnell Smith, James B. George, H. Clay Dallam, William A. Stewart and William Keyser, of this city."

☞ Ireland sends much butter to England

Book Table.

The New Eclectic for June is already in hand and is full of good matter, from the highest springs of periodical literature. *The Saturday Review, The Westminster Review, Once a Week, Macmillan's Magazine*, Anthony Trollope, *Lippincott's Magazine, Good Words*, all contribute; and in addition there are Scientific Memoranda, Art Notes, an Educational Department, Reviews, &c. $4 per annum. Turnbull & Murdock, 49 Lexington street, Baltimore.

DeBow's Review.—We have this very valuable monthly for April, crowded with original matter, Agricultural, Commercial, Industrial and Literary. *The Great March, The Progress of the West, The Future of the South, Recent Biographies of Lord Bacon, Farming in the South*, are a few of the topics treated. $6 per annum. 112 Poydras street, New Orleans—73 Broadway, N. York—corner of Union and Cherry streets, Nashville.

The American Journal of Science and Art.—Principal editors and proprietors, Professors B. Silliman and J. D. Dana. Price $6 a year. Silliman & Dana, New Haven, Conn. Men of science know too well the character of this journal to need more than a reminder, that it is issued every two months in numbers of 140 pages.

Westminster Review.—April issue, American reprint by the Leonard Scott Publishing Co., 140 Fulton street. Contents: *Don Quixote. The Pilgrim and the Shrine. Modern Notions of Government. Hindu Epic Poetry. Popular Education. The Church System of Ireland and Canada. Spiritual Wives. Democratic Government in Victoria. Contemporary Literature.*

Demorest's Illustrated Monthly has become, we suppose, as necessary as a new fashion, to every woman who would be up with the times. Besides the elegant fashion plates, a full pattern of some fashionable garment comes folded neatly in each number. With the fullest information in all dress matters, from the highest authority, Demorest's is also a literary journal much superior to the mass of parlor periodicals, and has much useful matter on household topics. $3 yearly. W. J. Demorest, 473 Broadway, N. York.

The Land We Love.—Gen. D. H. Hill, Charlotte, N. O. The May number appears with a beautiful engraving, "Family of Hon. Jeff. Davis," a very interesting family group of the little girls and boys, two each, of the Chief of "The Lost Cause." Contents: *Sketch of Maj. Gen. Ramseur. The Realm of Enchantment. Industrial Combination. Seven Pines. Mary Ashburton. Model Housekeeping. Demoralized Weeklies. Haversack.* Editorials, &c.

The Northern Monthly—132 Nassau street, New York. The May number gives us *The Greenback Era. The Thief in the Night*, concluded. *Easter Day at Rome. A Huguenot Family. The Proper Use of Stimulants and Narcotics. The Red Knight. Concerning Eccentric People. Claude Gueux. The National Debt.* Editorial.

The Galaxy for June, is a star number, handsomely illustrated, brimful and running over with entertaining and instructive matter.—The table of contents would take half a page to contain them. $4 a year. Shelden & Co., 498 and 500 Broadway, N. York.

RUST IN WHEAT.—The opinion is becoming quite prevalent that sowing grass seed with wheat in the fall causes rust in wheat, owing to the moisture the grass retains and imparts to the wheat stalks. So says an unusually intelligent agricultural journal; but its fallacy is apparent, when it is known that the rust in wheat is a small cryptogamic fungus, which grows only on the wheat plant, and cannot be germinated on grass or any other grain.—*Weekly Press.*

The "fallacy" is not made apparent to our eyes, by the reasoning of *The Press.* It is argued on the first part, that the rust is caused by "the moisture the grass retains and imparts," and the meaning is, we presume, that this excess of moisture encourages the growth of "cryptogamic fungus." It is no answer to this to say, that this fungus does not grow on grass.

We think, however, that "the fallacy" is made apparent in the fact, that wheat on clover fallow, with which no grass seeds at all are sown, is about as liable to rust as any other.—*Ed. Am. Farmer.*

Wet ground should be thoroughly drained.

Effect of Cattle on the Fertility of the Farm.

There is apparent discrepancy in the teachings of even judicious writers on topics of importance, which is calculated to confuse the inexperienced. Discussion is necessary, to reconcile the inconsistency and to bring the truth clearly out.

One of these topics is the effect of stock keeping on the fertility of the farm, and our remark is suggested by the following from sources alike entitled to respect. One writer says: "On an unlucky day I fell into the error of increasing my stock of cattle from a sufficient number to afford me plenty of milk, butter and fresh beef, to a much larger number, since which time my lands have been much injured in consequence of the constant trampling by the cattle, and their consumption of almost every living green thing where they were suffered to pasture. The little space manured by them has been at the expense of hundreds of acres."

On the other hand we have the following: "There is no way to keep up a farm so readily or so well as by keeping all the stock it will fairly carry, in order to produce the largest possible quantity of good manure.—Something may be done with artificial manures to be sure, but they are to be considered rather as stimulants to the immediate crops than as means of keeping up the permanent fertility of the soil and condition of the land. We believe in stocking a farm pretty nearly up to its capacity. We do not mean by this to recommend a farmer to keep more than his farm will carry well, but to keep as much, and if he has to supplement a little—that is, to buy more or less grain or hay to help out a rather short crop—he had better do this than to sell his hay for want of stock enough to consume it. In other words, it is better to sell the produce of the farm on four legs than to sell it in the form of hay and grain, unless he has some other and extraordinary means of supplying a full equivalent in the form of fertilizers, that will keep up the condition of the land."

Now, however apparently contradictory, these views are equally correct. Nothing could be more unwise than the heavy stocking spoken of by the first writer. On ordinary grain and tobacco farms there is no true provision made for cattle. Large surfaces are cultivated, and the chief dependence, necessarily, for keeping up their fertility, is clover, or such natural growth as succeeds the cultivated crops. There is no time allowed for a turf to thicken up between the crops. There is no sod to receive the heavy tread of cattle. If these are turned on them in numbers sufficient to consume the summer growth and to feed up the winter stores of straw and corn fodder, the surface is torn to pieces by their hoofs, the surface-covering, so conservative of fertility, scattered to the winds, and there is no recompense, after all, but poor cattle, the most unprofitable of crops. The universal experience, therefore, under such a state of things, is rapid impoverishment of the land and very poor returns from the stock-raising. It was the observation of such results which suggested the system of the distinguished agricultural writer, John Taylor, of Caroline county, Virginia, known as the "enclosing system." Under it, after the crop of grain was removed, the field was to be rigidly shut up for two years, and the whole growth religiously devoted to the improvement of the land. Not a hoof was to be allowed to trespass on these inclosures, held sacred to the fertilization of the soil. It may be well to say in passing, however, that this system was found to be less successful in practice than on first thought we should expect it to be.

When clover culture came into practice, it was found that a degree of grazing was rather profitable than otherwise to the land. A good growth of clover, consumed partially and trodden close to the surface, best served the purpose of fertilizing, while it fed well the comparatively small stock which a grain farm should have. Under very favorable circumstances, an even pretty close grazing of clover would not seriously interfere with the improvement of the land, the roots in that case still yielding enough of fertilizing matter. But generally, and for ordinary soils, the least possible amount of grazing should be allowed, unless special preparation be made for it.

On a farm devoted to grain and tobacco, this extra provision should consist of an outlying, standing pasture, to be improved by lime, plaster, or any other means at command. No access of stock to the cultivated fields should be at any time allowed beyond what is necessary to tread down the growth, of whatsoever kind, that it may perish in contact with the ground, instead of drying and wasting in the air. In such case, a good clover field, the main purpose of which is to enrich the ara-

ble fields, will afford a very serviceable addition to the grazing at certain periods and for a limited time. The standing pasture may be stocked to its full capacity, and the straw, corn fodder, &c., may be profitably consumed in winter, and the corn, to any necessary extent, in making good beef and mutton. It is only by some such management, that stock can be made to pay, in connection with any ordinary system of grain and tobacco growing.

But the most feasible and surest method of preserving and increasing the fertility of the soil, and getting from it a profit at the same time, is in such a lengthening of the rotation as will afford ample sod ground for grazing. Corn first in course, then oats, then wheat; clover comes next, to be followed by wheat, if it be desirable to take two crops of this grain. Otherwise timothy and other grass seeds are sown with the clover, to come in succession, and serve two years for hay, and for pasture so many years as the number of fields will allow—whether two, three or more. Here is the best provision made for pasturing stock. A firm sod, not liable to be torn up and destroyed by the tread of cattle, and rather improved than damaged by the closest stocking. For it is maintained by experienced graziers that such is the result of judicious grazing.

After the grazing comes the feeding—consuming all the hay and coarse fodder, either for food or litter, and all, perhaps, of the corn, making a large mass of manure of the best possible quality, and fitting for market such beef and mutton as gladden the heart of the epicure. Even where little profit is expected from the sale of the meat, this method of feeding is followed often for the mere results in improving the land, the increased profits from grain making up the deficiency. In Great Britain we know this is commonly the case, and the journal above quoted, says, that good farmers of the Connecticut valley find it for their interest to buy a large amount of stock in the fall, and to buy grain from the West at high prices, to feed out for the sake of the manure. They may lose on the stock, but look to the crops they may produce from the manure, to make up any loss sustained on the stock, and having tried it year after year, they do not look in vain. They have learned to put confidence in manure, and every farmer who expects to prosper must learn the same lesson. Manure is the basis of the farmer's prosperity, and stock is the source of manure.

Clover Hay.

We have, for some years past, advocated the cutting of clover for hay at an earlier stage of its progress than is common in this country. The usual indication of fitness for the scythe is the browning of the blossoms to the extent of one-half or two-thirds; but it is by no means uncommon to leave it, under press of other work, much beyond those points. The consequence is too great hardening of the woody stems, and a great and incurable damage done the quality of the hay by the rotting of the lower leaves. These fill the hay with that impalpable dust so distressing to horses, and, highly nutritious and valuable as otherwise it would be, makes it unfit food for them. We have urged, therefore, the harvesting of the crop when it has come pretty well into flower, without further delay. That this is the proper period for cutting, we may take a hint of from the bees and other insects. When they begin to operate on the clover blossoms, it is a sign that sugar has been elaborated. If the clover be not then cut, the sugar goes to perfect the seed, and is lost to the hay.

An experiment made some years ago by Professor Horsford seems decisive as to the point that it is to be cut neither before nor after the period of full development of bloom. He found that clover cut at the surface of the soil when the heads just began to appear, produced only 0.80 per cent. of sugar. Clover cut when the heads were fully developed produced 1.15 per cent. of sugar, very near fifty per cent. more than that cut first.

An important incidental advantage of the earlier cutting is, that we get a week or more of time in which we may take advantage of the good weather, and so secure the crop with less risk of exposure to rains—a very desirable point. Hay cured thus early is more nutritious, more delicate, more apt to be well cured, and sooner put out of the way of damage from exposure. It favors very much, too, the second or seed crop, by giving it the opportunity of getting well started before the excessive heats of summer.

CURING THE HAY.

Green clover contains, when first cut, from seventy-five to eighty-three per cent. of water.

It contains also a certain amount of sugar, which is easily fermented. Therefore, if cut and placed in a barn or stack, should fermentation be produced, it will destroy the sugar and other nutritious qualities, and vinegar or acid will be produced, rendering the hay sour and unfit for food. If sufficiently dried, the sugar will remain with the fibre, and the hay will be nutritious, wholesome food for stock, and supply the animals with not only food, but an element (carbon) which will generate animal heat. It will, from this view, be seen how important is a proper curing of the hay.

No rule can be given as to the length of time which clover should be allowed to dry in the sun and air before it is put up, because much will depend upon the previous condition of the weather, the dryness of the ground, and the quantity of water the clover may contain, but a point should be made of not having the leaves destroyed by too much drying in the sun. In favorable weather, a few hours' wilting is sufficient, before putting it into small cocks, which, after standing a day, may be thrown open and taken at once to the mow. But the process of curing demands especially the eye of the master, and no advice can be implicitly followed. It must be matter for the exercise of his own good judgment.

VALUE OF CLOVER HAY.

While every one knows, and is quite familiar with the fattening qualities of a clover pasture for stock of every description, clover hay is poorly appreciated. There is no doubt that this is because it is generally so badly cured and imperfectly preserved. It is harder to cure than the common hay grasses; is fit to cut when there is much more liability to rains than later in the season; and it cannot be properly preserved in stacks or ricks out of doors. A large portion inevitably rots, and the remainder is more or less damaged.

If evidence is wanted of the nutritious qualities of clover hay, let us examine its chemical indications.

Professor Johnston analyzed a first crop of clover from an acre of land, and found it to contain the following ingredients:

Albumen, gluten and casein	430 lbs.
Fat, oil, &c	143 lbs.
Starch, sugar, gum and dextrine	1,825 lbs.
Fibre and husk	1,156 lbs.
	3,554 lbs.

According to Boussingault, the elements of a first and second crop of clover from an acre of land are:

Carbon	2,787 lbs.
Hydrogen	288 lbs.
Oxygen	2,211 lbs.
Nitrogen	118 lbs.
	5,374 lbs.

The clover plant leaves a large per cent. of ash on burning, the whole being 11.18 per cent.; the leaves give 10.69 and the stems 8.62 per cent.

The value of the ashes may be estimated by the following percentage of its several elements:

Potash	12.164 per cent.
Sodium	1.474 per cent.
Soda	30.757 per cent.
Lime	16.556 per cent.
Magnesia	6.262 per cent.
Phosphate of iron	506 per cent.
Chlorine	2.159 per cent.
Phosphoric acid	2.957 per cent.
Sulphuric acid	801 per cent.
Silica	1.968 per cent.
Carbonic acid	22.930 per cent.
Sand and coal	1.244 per cent.
	99.718 per cent.

Home-Made Superphosphate.

There is much well-meaning advice in our agricultural journals, and instructions given to enable farmers to manufacture their own superphosphates and prepare and mix guanos, in order to insure their being genuine, and such as may suit their purposes. We suggest that it is time now to forego such advice, for the reason that, after so many years, nobody, perhaps, follows it, and no one, within our knowledge, at least, who has tried, has found it well to continue the practice. The truth is, it requires skill, experience, knowledge of the articles used and an amount of attention which farmers cannot give, and they have by very general consent, and very prudently, left the matter in the hands of manufacturers, and there it will stay. What most concerns them is to see that these do their work well, and give them the worth of their money. There will soon be, we hope, a system of inspection which will be satisfactory to fair-dealing manufacturers, and afford sufficient protection to consumers. The trouble we have had, comes from dishonest and irresponsible men, who should be rooted out by a most vigilant and exacting inspection.

Dr. Anderson, of Glasgow, very high authority and of long experience in the examination of fertilizers, gives the composition of good superphosphates as follows:

"The composition of superphosphates must necessarily vary to great extent, and depends not only on the materials, but on the proportion of acid used for solution. The following analyses illustrates the composition of good samples made from different substances:

	Bones alone.		Bone-ash.	
Water	7.74...	7.79	5.33....	10.40
Organic matters and ammoniacal salts	17 83...	21.69	6 94....	4 92
Biphosphate of lime	13 18...	9 87	21.35....	23.09
Equivalent to soluble phosphates	(20 57).	(15.39)	(33.33)..	(36 02)
Insoluble phosphates	10.31...	21 17	5.92....	6 08
Sulphate of lime	46.00...	35 30	56.16...	47.78
Alkaline salts	1.46...	0 94	trace.	
Sand	3 48...	3.00	4.23....	4.30
	100.00	100.00	100 00	100.00
Ammonia	2.11...	3.01	0.23....	0.31

The analyses above (continues Dr. A.) are all good superphosphates, in which abundance of acid has been used so as to convert a large proportion of insoluble into soluble phosphates; but there are many samples of very inferior quality to be met with in the market, in which the proportion of acid has been reduced, and the quantity of phosphates made soluble is, consequently, much lower than it ought to be. The following analyses illustrates the composition of such manures, which are all very inferior, and, generally, worth much less than the price asked for them:

Water	21.60	5 37	7.19
Organic matter and ammoniacal salts	11.62	13 91	8.80
Biphosphate of lime	2.98	2 02	6 42
Equivalent to soluble p..osph's..	(4 65)	(3 15)	(10.02)
Insoluble phosphates	25 70	15.80	14 03
Sulphate of lime	23.66	47.52	51.93
Alkaline salts	10.70	3.73	3 43
Sand	3.80	11.65	8.20
	100 00	100 00	100.00
Ammonia	1.32	0.59	0 33

Although there is no manure which varies more in quality, or that requires greater vigilance on the part of the purchaser in order to obtain a good article, there is no doubt that superphosphates, owing to the process of manufacture being better understood, and to increased competition, have considerably improved in quality."

Elder Berry Wine.—A lady correspondent of Henrico Co., Va, asks if some of our subscribers will give "a receipt for Elder Berry Wine," and also "the best mode of treating the Osage Orange."

☞About 2000 mules were prepared for the Southern market in Shelby Co., Ky., last year.

For the "American Farmer."

Tobacco Curing.

PORT REPUBLIC, Calvert Co., Md., May 16th, 1868.

MESSRS. EDITORS: Receive my thanks for your notice of Bibb & Co's "Tobacco Curing Apparatus" in the May number of the "American Farmer," and also for your commendation of the article on the subject of tobacco culture, published in the April number of the "Maryland Farmer." In your editorial comments you have fallen into some errors, which please allow me to correct. First: You are mistaken in supposing the apparatus to have been patented ten years ago. It was patented June 25th, 1861, and in the fall of that year and the succeeding one, I used it in curing a part of my crop, (one furnace not being sufficient for the whole,) with entire success, my commission merchant writing, upon the receipt of the first fired crop, "your tobacco is pronounced by both seller and buyer, to be the finest crop from Lower Maryland ever seen in the Baltimore market." But owing to the great excitement growing out of the war, and the certainty of the abolition of slavery, together with the *high price of common tobacco* in the fall of 1862, the planters in this section paid more attention to quantity than quality. The result was, all idea of introducing the "Furnace" was abandoned, and none were manufactured from 1862 'till 1867. In the summer of the latter year, Mr. Bibb and myself were solicited by some of our planting friends to recommence the manufacture of them, which we did, mainly to order, and sold last season some 15 or 20, the greater number in my county and neighborhood.—This is a true history of the Tobacco Furnace.

You say in the article referred to, "according to my (Dr. D.'s) statements, tobacco cured by the Apparatus is more than trebled in value." This is an error. I presume you got the idea from an article written by a gentleman from a neighboring county, who visited me this spring, with a view of seeing my tobacco and "Furnace," and upon his return home published in a county paper an account of his visit, in which he gives it as his opinion, that tobacco cured by the "Furnace" is more than trebled in value. Everything I have written upon this subject has been over my own signature, and if you will refer to the articles recently published in the "Maryland Farmer," you will there see that my estimate

is (if the tobacco is ripe) an increase in value of from 50 to 100 per cent., depending upon the character of the fall for curing tobacco in the natural way, whether *wet or dry*. In this estimate I am sustained by two commission houses in your city, who have sold my tobacco for the past two years, and whose certificates —endorsed by the leading buyers and manufacturers in Baltimore—are appended to our circulars.

I desire also to say a few words in reference to my extravagent system of manuring, as you are pleased to term it. And first in reference to tobacco beds. Admit your estimate to be correct, viz: $30 a year to ensure an abundance of forward plants for 20 acres.—The yield in money to the acre from my tobacco crops for the past two years, after deducting cost of manures, has been over two hundred dollars, and the failure to plant *one single acre* in *good time*, would entail a loss upon me of four or five times thirty dollars. But this is not all—this bed, after planting the crop, will produce, if properly cultivated, forty to fifty dollars' worth of tobacco—thus paying the cost of the manure.

Now, Messrs. Editors, a word of explanation, in reference to the apparently small increase of pounds of tobacco under my present system, when compared with the old.—My original tobacco lots contained 40 acres, some parts of which are very productive, but too compact in texture to produce the finest article of tobacco, and looking (at the present time) more to quality than to quantity, have, under my present arrangement, selected the most sandy and least productive parts of the field for tobacco, reserving for corn the more compact and richer parts. In this way I have succeeded in making heavy crops of corn, and by manuring well, have succeeded in producing 1,000 pounds tobacco of superior quality to the acre, on land by no means in good heart. You are also mistaken in supposing I use double the quantity of manure to the acre that I formerly applied; my estimate was made with reference to the money outlay and not in the quantity of manure to the acre—the price of all bought manures being now higher. For many years, I have been an advocate of heavy manuring, and believe, in the present condition of our labor system, the great scarcity, and high price of the same, will force the planter to cultivate less land and thoroughly manure what he does work. Every acre cultivated should be made to produce as near its maximum as possible. Large returns from a small surface is the principle upon which I shall in future be governed in my farming operations. G. W. DORSEY.

We cheerfully give place to the above, that Dr. Dorsey may have the benefit of the corrections he makes on the several points noted.—EDS.

Editors of American Farmer:

In reply to your suggestion in May number, as to particulars of a crop of potatoes raised by me, I send you the following memorandum:

There were planted on eleven acres of very poor sandy land—

38	bushels of	Carter Potatoes, which produced.....	610
28	"	Peach Blows.....	560
2	"	Early Goodrich.....	90
			1260

Some of the Peach Blows and Carter's rotted—say about 60 bushels.

Used 300 lbs. of Peruvian Guano to the acre, broadcast and ploughed in.

Planted sets 12 inches apart in drills 3 feet apart.

Sold part of the crop at $1; part at $1.50; Goodrich at $2.50. Amount of sales $1206.41.

SOUTH RIVER, A. A. Co.

SALT FOR TOBACCO LAND.—A correspondent of the *Lynchburg* (Va.) *News*, writing from Campbell county, gives the following as the result of using salt as a manure: "I used salt as a manure for tobacco on the crop just housed, and am satisfied it is the best and cheapest fertilizer that can be used, Peruvian guano not excepted. I applied a sack of Liverpool salt per acre, after the 25th of June, on a piece of poor land, and the tobacco was planted three days after. The land was not thoroughly worked for thirty days after the salt was applied, yet it produced a larger and thicker article than my highly-improved lots, which were dosed with a heavy coat of stable manure early in the spring, and the tobacco planted before the 5th of June. I applied the salt on one lot broadcast, and on one in the row before bedding—the former produced the best tobacco. A neighbor used 300 pounds of Peruvian guano per acre on good land. The tobacco was small, and fired as rapidly as it ripened. Not a plant fired where salt was used. Not more than half an average crop was made in this neighborhood."

Difference in Food for Cows.

If the milk is to be sold without being manufactured into butter or cheese, there are many kinds of food which may be given to force the quantity, that would injure the butter. For instance, oilcake is not right for making nice sweet butter, nor flaxseed, nor is swill, or any oily, greasy feed. Straw is altogether out of the question; hay, cut after it has been in bloom and the seed commencing to ripen, is only a few degrees better; thresh out the seed and knock off the leaves, and it is about equal.

A gentleman sent a communication or two, somewhere about this time last year, or it might have been earlier in the season, in which he clearly proved by his experience the vast difference between hay cut when the grass was quite young, and when in the state usually mowed in America. He formerly gave meal, &c., to help force milk, but since making his hay from grass so young and tender, his cows greatly increased their milk, and he recommended giving nothing but this fine quality of hay. However, though he was quite right with regard to the extraordinary superiority of such hay, yet where sweet, fresh bran and pollards can be bought by weight, and oats to be ground up and mixed, they are cheaper and better than the other articles enumerated by our Canadian correspondent; but pumpkins in the autumn, carrots through the winter and spring, after which successions of young forage crops till pumpkins come round again, will admit of corn meal being given to the great addition of richness; and no matter what any one says to the contrary, if these things are given with no sparing hand, our Canadian neighbor will find this to be reliable information for the production of rich milk.

The well-digested and sensible remarks following the Canadian's quest for information, make it unnecessary to say more on the subject; perhaps there was no need of alluding to the subject at all, but having, ever since a child, been intimately connected with good dairies, some of which have been very extensive, and all of them being profitable ones, I think forty years' experience ought to be some authority.

Linseed cake is the most fattening feed; the seed, boiled to a jelly, I have used, too, with good results; but either, though it increases the quantity of milk, and adds exceedingly to its richness, imparts an unpleasant flavor to butter.

If a man buys food for cows, he will not be able to get pumpkins or roots at a price to pay, though some now and then would add to the health of the cows—that is, I am supposing in this case they are stabled in or near a town where they have no fields to roam in and get grass in fall, and I am thinking of milk being retailed to the inhabitants. In this case there would be no objection to mixing ground cake, &c., with bran, and *brewers' grains* (ale) will be found cheap to mix also.—*Country Gentleman.*

Profits of Farming.

At a recent meeting of the New York City Farmers' Club, it was announced that the farmers of the celebrated Orange county did not make over seven per cent. on capital invested; and Horace Greeley replied that he had no doubt that this small figure was in consequence of calculations based on double what the farms were worth. Mr. Greeley is probably wrong. We recently made some calculations on what many of our Montgomery county farmers realized, basing the value of the land on what it would probably bring at a forced sale, and found the average profits only two per cent. We believe the trouble to be too much land for too little capital, as stated in our columns last week.—*Weekly Press.*

This is a poor showing indeed—seven per cent. in the "celebrated Orange county" of New York, and two per cent. in the equally well known Montgomery county of Pennsylvania. We should be glad to know whether in the latter estimate Mr. Meehan, who we believe is responsible for the agricultural columns of *The Press*, has given the farm credit for the home furnished the owner, and the thousand articles of consumption which a family is provided with.

The farm, as an investment, should have credit, too, for an average yearly increase in value. A great deal of the wealth of those who have held real estate in Maryland, Pennsylvania and elsewhere, during the twenty-five years past, consists in the gradually enhanced value of such property. This is not indeed wholly creditable to the farming, but should be always considered in estimating the value of an investment. The increased value in Maryland averages for that period of time, we suppose, one hundred per cent.—equal to four per cent. per annum.—Ed. Am. Farmer.

Sleep brings our childhood back again.

Destroying Tobacco Suckers.

Under this heading we have another item of practical instruction, which, starting from so high a source as the monthly report of the Agricultural Department at Washington, is making its way without question among the journals. It is furnished for the monthly report by a Kentucky tobacco planter, for the benefit of "tobacco-growers who would save the labor and trouble of suckering their plants several times during the season." It is as follows: "At the time when suckering is about necessary, provide yourself with a small tin oil-can, the tinnner making the spout of it with a sharp point, similar in shape to the blade of a penknife; then filling your can with a solution of crude potash, go through the motion of suckering by breaking off such as you see, and then, with the point of your can, make an incision down obliquely into the stalk, just at the spot between the stem and the stalk, where the sucker would grow, dropping into the incision so made one drop of the potash. This is the whole secret: It will not injure the valuable leaf, check its growth or hurt the plant, but it will kill the germ of the future sucker. With practice a person can doctor a plant, as above stated, with as much celerity as one can do the suckering, and will thus save the trouble of going over and suckering millions of plants every year."

We do not suppose there is one person familiar with the practice of "suckering" tobacco, except the curious inventor of this method, who will be tempted and misled by it; but there are a great many novices just now in tobacco cultivation, and it is unfortunate for them that there is no word said against this fancy method of getting rid of suckers.

Supposing this operation of depositing a drop of fluid in an incision made at the foot of each leaf to be perfectly successful when done, which we very much doubt, the tin spout of an oil can is to be made "with a sharp point," like the blade of a knife, for the purpose of making an incision for the deposit, how long is so thin a slip of tin, "cutting obliquely into the stalk," likely to work well? Supposing no difficulty here, imagine the operator who, ordinarily, will put one hand to the lowest leaf and running it around as he ascends, clear out every sucker—imagine him, with his oil can in one hand and the other lifting each leaf to show him where to make the stab with his blade, does any one who has ever suckered a plant of tobacco believe that, with any amount of "practice," "a person can doctor the plant as above stated with as much celerity as one can do the suckering?"

But supposing this possible, where is the great advantage? The paragraph winds up with a flourish about the trouble saved "of going over and suckering millions of plants every year." Now, of course, the inventor of this notion designs to operate at every leaf—that is, wherever a sucker will grow, going over the whole crop. How much more is done by the common process? Each plant is topped in due time, and shortly after, the suckers begin to grow, starting at the bottom leaves and coming, one by one, in regular order, up the plant. There need be none taken out till the last one shows itself, and the plant suckered then, every one is destroyed, and destroyed so short a time before the crop is cut as to leave little chance of further trouble. All the saving proposed, however, is in this last clearing off of such as may start again, and are usually got rid of when the cutting commences. We prefer the old ways. —*Weekly Sun.*

Improved Cattle--Ayrshires.

Within a period of about seventy years the leading breeds of cattle have been vastly improved, with respect to appearance, size, and productive powers. The precise period when this improvement commenced is not material, though tolerably distinct traces of it are found in records of a hundred years back, more or less. Previous to that time the prevalent breeds of cattle on the Continent and the British Islands, were noticeable rather from the incompleteness of their make up, the diminutiveness of their bodies, and the paucity of their products, whether for the dairy or for slaughtering purposes. The peculiar distinctive divisions are Long-Horns, Middle-Horns, Hornless or Polled and Short Horns. There are several intermediate varieties differing, in some characteristics, but still retaining a general family resemblance to one or the other of the leading classes.

Whether it has been by crossing, on the part of breeders, or from improved management and keeping, certain it is that all the leading stocks have shown marked improvement within the last thirty or forty years.

Among the most noticeable of these improved breeds, and marked favorites with cattle breeders and dairymen, is the Ayrshire, supposed to be an improved development of the old Teeswater, once in high repute in various parts of England. Flint, in his treatise on milch cows and dairy farming, devotes considerable space to this breed, and concludes that for dairy purposes purely or mainly, the Ayrshires deserve the first place. In consequence of the cow's small, symmetrical and compact body, well formed chest, and capacious stomach, there is little waste through the respiratory system; while at the same time, there is a very complete assimilation of the food, and thus she converts a large proportion of her food into milk. It is the verdict of many dairyman that, for the quantity of food consumed, the Ayrshire cow gives a larger return of milk, and of a better quality, than any other breed.—*Ex.*

Hay, Corn and Roots Compared.

It is not to be hoped that in the mass of matter now published on agricultural topics we may escape without a good deal of nonsense. Even the best of your journals sometimes supply us with absurdities, through their correspondents; how much more when the editorial chair is assumed by such as, being themselves blind, can be only blind guides. It is plain to see, by the careful reader of our agriculturial journals, that there are too many who think it a small matter to fill the place of editor; and a small matter it is, indeed, when the work is made to consist only of clippings and gatherings, with none of the discrimination which only good judgment, guided by experience, can give.

In illustration of what we say, we copy here from an exchange, which ranks deservedly with the ablest of our agricultural periodicals, the following estimate of the "comparative value of hay, corn and roots," in which it will be remarked, by the way, that the comparison is confined to hay and roots:

"An acre of ground retained expressly for hay, yields on an average not more than one and one-half ton of vegetable food; an equal space planted with carrots or ruta-bagas will yield from ten to twenty tons, say fifteen tons, which is by no means a high average, and has often been attained without any extraordinary cultivation. It has been ascertained, by careful experiment, that three working horses, fifteen and one-half hands high, consume hay at the rate of two-hundred pounds per week, or five tons and one thousand and forty-eight pounds per annum, besides one and one-half bushel of oats per week, or seventy-eight per annum. By a repetition of the same experiment it was found that an unworked horse consumed hay at the rate of four and one-quarter tons per annum.

"The produce, therefore, of nearly six acres of land is necessary to support a working horse for one year, but half an acre of carrots, at six hundred bushels per acre, with the addition of chopped straw, while the season for feeding them lasts, will do as well, if not better. These things do not admit of doubt, for they have been the subject of exact trials, as some of your agricultural friends can testify."

It is to be regretted that, much as has been written on the matter of feeding roots, and their value as compared with other articles of food, there have been, so far as we know, no experiments of such character as can at all determine the question, which is one of very real importance. Here is a writer, however, who is described in commendation, as an "old correspondent" of a journal, which is very often quoted, and is entitled to the reputation of being generally sensible and practical.—This "old correspondent" settles such a question with the mere assertion that "these things do not admit of a doubt," and that somebody "can testify" to their truth; and his article is passed around as a wise thing, for no other reason than that an "old correspondent" of such a journal is presumed to be wise, and a good many persons want to believe that it is a part of improved husbandry to substitute roots for hay.

In further illustration of the reasoning of the "old correspondent" it will be seen, that in the first lines of the paragraphs he compares the product of hay from "an acre of ground retained expressly for hay" with "an equal space planted with carrots or ruta-bagas," without any reference to the cost incurred in the due preparation and manuring for a crop of roots.

Again, he compares one and one-half ton of dried hay, the yield of an acre, with fifteen tons of roots, without reference to the great percentage of water of which their weight is composed.

In another place he compares again with

the product of an ordinary acre of hay, six hundred bushels of carrots, as a crop ordinarily made, and again without reference to the cost of cultivation.

It is not that we mean to controvert the conclusions which this writer comes to.—They may be perfectly correct for ought we know, but we deprecate this flippant way of settling vexed questions, and the readiness with which mere assertion is received on the authority of even "an old correspondent."—*Weekly Sun.*

The Turf in England.

A London correspondent of the *Field, Turf, and Farm*, in describing the late closing scenes of last year's racing campaign in England, says the "sport was second rate; but as if to make amends for this, betting raged fast and furious, as though backers were resolved to make the most of the last opportunity to recoup themselves for the disasters of a most unpropitious season. He concludes as follows:

The Marquis of Hastings must have won at least £60,000 in stakes and bets by Lady Elizabeth alone, during the present year, and yet I should say that his balance is decidedly on the wrong side. Altogether, indeed, the past two Newmarket meetings have been most favorable to the bookmakers, and corresponding disastrous to backers, the latter of whom, with one or two exceptions, have been frightfully "hard hit." The result was an extremely bad "settlement" at Tattersalls on Monday last, when several large "accounts" were conspicuous by their absence, and the state of things prevailed to such an extent that some of the leading bookmakers did not hesitate to stigmatize the "settling" as one of the worst on record. I know for a fact that one of the "biggest" members of the ring, who had to receive the modest little balance of £12,000 on the week, after meeting all demands on himself took £10,000 with him to Tattersalls, and returned home with only £8,000 in his pocket. One well-known owner and one of the most inveterate "plungers" of the day, who has hitherto been most punctual in his engagements did not put in an appearance at all, either personally or by deputy, but doubtless everything will be "made pleasant" before next Monday.

Imported Poultry.

We have just inspected a valuable lot of poultry, imported into Philadelphia by D. W. Herstine, one of the prominent exhibitors at our recent poultry exhibition at Eleventh and Chestnut streets, Philadelphia. They arrived from England by steamer on the 21st ult., having been selected without regard to cost, among the prize birds, and they constitute probably the most valuable importation of the kind which has been made into Philadelphia for many years. They comprise the following:

A white Dorking cockerel, own brother to the first prize Birmingham bird.

Two pullets, white Dorking, second prize of Bellevue show.

One silver gray Dorking cockerel, third prize at Birmingham.

Two pullets, gray Dorking, first prize at Ulverstone.

One buff Cochin cockerel, the winner of five first prizes.

Two buff Cochin pullets.

One Brahma Pootra cockerel, second prize at Leeds.

Two Brahma Pootra pullets, first at Manchester.

We have never seen so splendid a lot of poultry, and where all are so superior, it is difficult to particularize; but the buff Cochin cockerel, who had obtained five first prizes, was of extraordinary proportions, and in fine plumage, lofty carriage, and general appearance, seemed to overtop his comrades, if that were possible.

The Brahmas were of the gray variety, more known abroad, perhaps, than here, and had some peculiar excellencies and points, which will be novel to many of our poultry fanciers. They were very large, and beautifully marked with great regularity.

Such an importation as this, of four distinct and well determined breeds, will be invaluable as standards for comparison—showing what has been attained abroad, where the breeding of all kinds of domestic animals has been reduced to more of a scientific system than here. That class of persons, so apt to remark at our exhibitions "that they have better stock at home," would probably conclude differently after seeing these magnificent imported specimens of our friend Herstine. They arrived in excellent condition.—*Practical Farmer.*

Sunday Reading.

If a man is not rising up to be an angel, depend upon it he is sinking downward to be a devil; he cannot stop at the beast. The most savage men are not beasts; they are worse, a great deal worse. I have observed that when a man who once seemed a Christian, has put off that character, and resumed his old one, he loses together with the grace which he seemed to possess, the most amiable part of character he resumes. The best features of his natural face seems to be struck out; that, after having worn religion only as a handsome mask, he may make a more disgusting appearance than he did before he assumed it.

What Christ said of the evil spirit in a wicked man, may be said of the Holy Spirit in the heart of a penitent and faithful Christian. When he finds the house of the soul clean, and swept, and garnished, then He comes and brings with Him seven other spirits of grace, and dwells in it.

The Holy Ghost abhors uncleanness; will not come near to a defiled soul. Repentance sweeping the house, and scouring it clean and casting out all that defiles, presents it in a clean state, that so the Holy Ghost may enter into it, and fill it bounteously with all His good gifts.

The miraculous food which the apostles dispensed, neither gained nor lost any portion of the virtue, which Christ hath infused into it, through their personal merits or demerits; but increased, and grew, and nourished and sustained those who received it from the hands of the traitor Judas, as effectually as that which was distributed by St. Peter, or the beloved Apostle himself. And if we would receive the gifts of grace aright, evident it is, that we must seek them in the way of Christ's appointment; looking not in the smallest degree to the personal worthiness of the minister, but wholly and solely to Him, from whom the sacraments derive all their efficiency and virtue, and who alone is able to bless them to the strengthening and refreshing of our souls.

There is, and ever will be, a mixture in the church, till the great day of separation comes. There are good only in heaven; bad only in hell; this state admits a mixture of citizens of both cities.

Adam's family was the one, and only visible church for a time; therein there was a Cain, as well as an Abel; both sacrificed, though both where not sanctified. In Abraham's family (a visible church) there was an Ishmael, as well as an Isaac. In Isaac's house an Esau, as well as a Jacob. Among the Patriarchs (Jacob's issue) Simeon and Levi, with Joseph and Benjamin. In Noah's ark, a type of the church, there was a Ham; a Judas among the Apostles, a Nicholas among the deacons

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The end of funeral duties is, first, to shew that love towards the parties deceased, which nature requireth; then to do him that honor which is fit both generally for man, and particularly for the quality of his person; last of all, to testify the care which the church hath to comfort the living, and the hope which we all have concerning the resurrection of the dead.

Religion doth possess and affect *the whole man*: in the understanding, it is knowledge; in the life, it is obedience; in its affections, it is delight in God; in our carriage and behaviour, it is modesty, calmness, gentleness, quietness, candor, ingenuity; in our dealings it is uprightness, integrity, correspondence with the rules of righteousness. Religion makes men virtuous in all instances.

Concerning that faith, hope and charity, without which there can be no salvation, was there ever any mention made, save in that law, which God Himself hath revealed from heaven? There is not in the world a syllable muttered with certain truth, concerning any of these three; more than hath been supernaturally received from the mouth of the Eternal God.

There is no necessary part of our faith, couched in *figurative* language which Holy Scripture does not somewhere else plainly open in its *literal* meaning.

The life of every wicked person is prolonged, either for the purpose of his own amendment or, for the trial, through his instrumentality, of the good.

Hell is a barren place. Nothing grows in that land of darkness to solace and recreate the owner's mind. You shall have your lusts, but want the food you long for.

HOW TO KEEP BUTTER SWEET.—It is the easiest thing in the world. Simply put it in clean jars, and cover with a strong brine.—This will keep pure butter a year, fresh and sweet, as we know by experience. It is almost equally good to put in oak casks, headed tight. This is equivalent to canning fruit. The brine, in the case of the jars, acts as a heading, keeping the air out. But butter should be made well; we have never experimented on poor butter. Work out the buttermilk till you have only pure "beads," clear as rain water; but do not work so much as to break the grain, in which case you have a tough, heavy article in winter, and grease in summer. Such butter we advise no one to try to preserve.—*Rural World.*

Baltimore Markets, May 23, 1868.

COFFEE.—Rio, 13a17¼ cts. gold, according to quality; Laguayra 16¼a17 cts., and Java 23a24 cts., gold.

COTTON.—We quote prices as follows, viz:

Grades.	*Upland.*	*Gulf.*
Ordinary	28a—	00
Good do	28½a—	00
Low Middling	29a30	00
Middling	30a—	00

FERTILIZERS.—Peruvian Guano, $80; California $70; Rodunda Island $30; Patapsco Co's $60; Reese & Co's Soluble Pacific Guano, $56; Flour of Bone, $60; G. Ober's (Kettlewells) AA Manipulated, $70; A do. $60; Ammoniated Alkaline Phosphate, $55; Alkaline Phos. $45; Baltimore City Company's Fertilizer, $40; do., Flour of Bone, $60; do., Ground Bone, $45; do., Poudrette, $25; Baugh's Raw-bone Phosphate, $56; Baugh's Chicago Bone Fertilizer, $46; Baugh's Chicago Blood Manure, $50; Maryland Powder of Bone, $46; Rhodes' Super-Phosphate, $55; Lister's Bone Super-Phosphate $55; Berger & Butz's Super-Phosphate of Lime, $56; Andrew Coe's Super-Phosphate of Lime, $60;—all per ton of 2,000 lbs.; Pure Ground Plaster, $13.50a$14.00 per ton, or $2 50 per bbl. Shell Lime slaked, 6c., unslaked, 10c. per bushel, at kilns.

FLOUR.—Howard Street Super, $10 25a11.00; High Grades, $12 25a13.00; Family, $13.25a14.00; City Mills Super, $10.00a11.25; Baltimore Family, $15.75a16.25.

Rye Flour and Corn Meal.—Rye Flour, $9.75a10.00; Corn Meal, $5.75a6.00.

GRAIN.—*Wheat.*—Good to prime Red, $2.85a3.00; White, $2.80a2.90.

Rye.—$2.00a2.10 per bushel.

Oats.—Heavy to light—ranging as to character from 86 a97c. per bushel.

Corn.—White, $1.13a1.17; Yellow, $1 22a1.25 per bushel.

HAY AND STRAW.—Timothy $22a24, and Rye Straw $—a$— per ton.

PROVISIONS.—*Bacon.*—Shoulders, 14¼a00 cts.; Sides, 16¾a17¼ cts.; Hams, Baltimore, 20a22½ cts. per lb.

SALT.—Liverpool Ground Alum, $1.95a2 05; Fine, $2.90 a$3.00 per sack; Turk's Island, 50a55 cts. per bushel.

SEEDS.—Timothy $0.00a0.00; Clover $0.00a0.00; Flax $2 80a2.85.

TOBACCO.—We give the range of prices as follows:

Maryland.	
Frosted to common	$2.75a 4.50
Sound common	4.50a 5.00
Middling	7.50a 9.50
Good to fine brown	10.00a15.00
Fancy	17.00a25 00
Upper country	3.00a30.00
Ground leaves, new	4.00a13.00
Ohio.	
Inferior to good common	4.00a 6.00
Brown and greenish	7.00a 8.00
Medium to fine red and spangled	9.00a15.00
Fine spangled	15.00a20.00
Fine yellow and fancy	20.00a30.00

WOOL.—We quote: Unwashed, 28a30 cts.; Tub-washed, 38a42 cts.; Pulled 30a36 cts.; Fleece —a— cts. per lb.

CATTLE MARKET.—Common, $6.75a7 50; Good to fair, $7.50a8.50; Prime Beeves, $10 00a11.00 per 100 lbs.

Sheep—Fair to good sheared, 5¾a7¼; extra unsheared, 7¼a8¾ cts. per lb., gross.

Hogs—$12.50a14.25 per 100 lbs., net.

Wholesale Produce Market.

Prepared for the American Farmer by HEWES & WARNER, *Produce and Commission Merchants, 18 Commerce street.*

BALTIMORE, May 23, 1868.

BUTTER.—Western solid packed 25a35 and Roll 23a25; Glades, 33a35; Goshen, 38a36.
BEESWAX—38a40 cts.
CHEESE.—Eastern, 16¼a18½; Western, —a—.
DRIED FRUIT.—Apples, 6 to 8; Peaches, 8a10¼.
EGGS—21 cents per dozen.
FEATHERS.—Live Geese, 60 to 80 cents.
LARD.—Western, 19¼a20; City rendered, 20a21 cts.
TALLOW.—12a12½ cents.
POTATOES.—$1 60a1.75 per bushel.

NEW ADVERTISEMENTS—JUNE.

Lead Encased Block Tin Pipe—Colwell's, Shaw and Willard M'f'g Co.
Zero Refrigerator—Alex. M. Lesley.
Farm For Sale—American Farmer Business Agency.
Poultry Powder—G. W. Rittenhouse & Co.
Tobacco Worms—C. C. Henry.
Cure for Heaves in Horses—Francis K. Harley, V. S.
American Fruit Preserving Powders—L. P. Worrall.
Gray's Double-Cased Bee Hive—A. Gray.
Seed Wheat—George A. Deitz.
Wanted—Agents—J. Ahearn & Co.
Hampshire-Down Sheep—Robert Morrell.
Sewing Machines—Fred. W. Wild.
" " Secomb & Co.
Drugs, Chemicals, &c.—Coleman & Rogers.

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